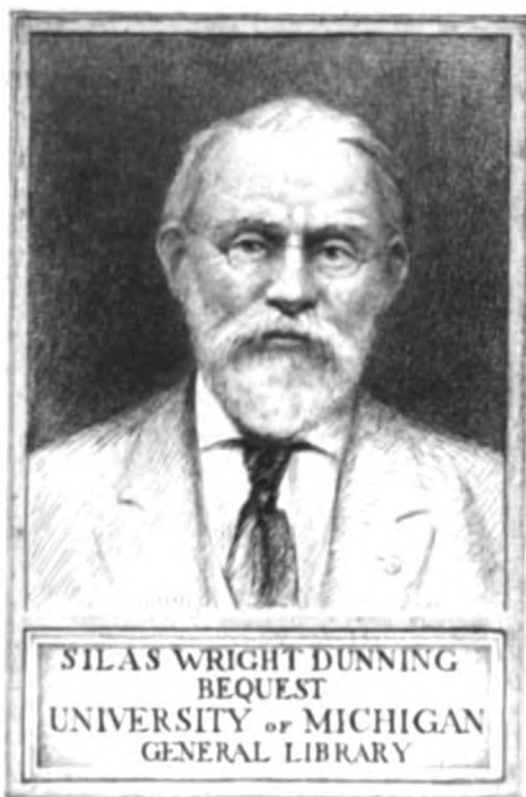

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

GoogleTM books

<https://books.google.com>



B 1,039,384



26
1
• 256

Dunning
Heffer
 9-18-36
 32691

Journal of the United Service Institution of India.

VOL. XXVIII—1899.

CONTENTS.

	PAGE
The First Sikh War, 1845-46. By Lieutenant-Colonel H. M. SINCLAIR, R.E.	I
From the Punjab Frontier to Uganda. By Lieutenant E. G. VAUGHAN, Deputy Assistant Commissary General	25
The Third Burmese War, 1885-87. By Major A. KEENE, D.S.O., R.A.	34
The Creation and Maintenance of a Reserve of Officers for the Indian Army. By Captain A. E. AITKEN, I.S.C.	56
The Mobility and Individual Training of Our Indian Cavalry. By an Indian Cavalry Officer	68
Cold Steel, and Indian Swordsmanship. By Mr. P. BRAMLEY, North-Western Provinces and Oudh Police	74
Shikar as a Training for Scouts. By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	88
Ambulance Work in Hill Warfare. I. By an Army Surgeon	91
Some Foreign Articles of Special Interest—	
Should Corps Artillery be retained or should the Combined Artillery be distributed among the Divisions	109
Trials against Armour Plates... ..	125
List of Medallists of the Institution	128
A few Short Notes on the Administration of the United States Army in the Philippines. By Captain S. S. LONG, Deputy Assistant Adjutant General, Hongkong	129
A Plea and Suggestion for a Recruiting Department for India. By Captain R. W. FALCON, District Recruiting Officer, Pathan District	139
Ambulance Work in Hill Warfare. II. Concluded. By an Army Surgeon	146
Battles of the Deccan, No. I—Assaye. By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	164
Insanitary Cantonments. By Captain H. F. THUILLIER, R.E.	169
On Marching. By Major B. M. SKINNER, R.A.M.C.	179



United Service Institution of India.

LIST OF MEMBERS.

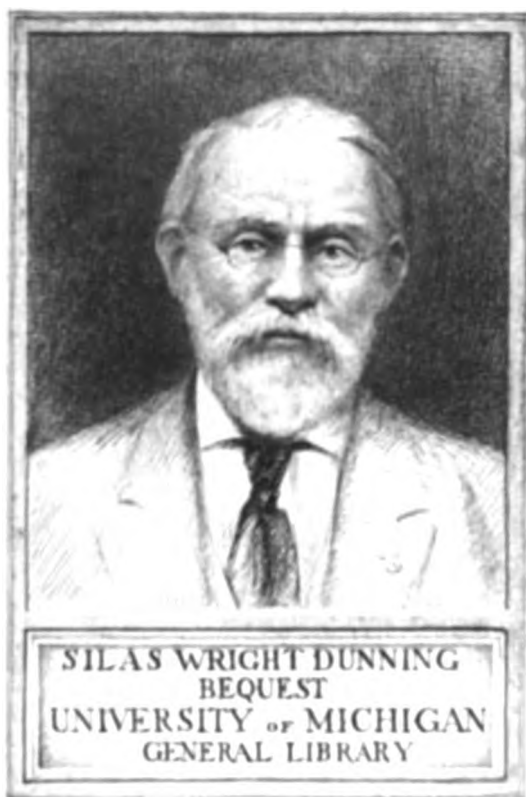
On 1st January 1899.

Patron :

His Excellency the Right Hon'ble VICTOR ALEXANDER BRUCE,
EARL OF ELGIN and KINCARDINE, P. C., L. L. D., Lord Bruce
of Kinloss and Lord Bruce of Torry in the Kingdom of
Scotland and Baron Elgin of Elgin in the United
Kingdom, G.M.S.I., G.M.I.E.,
Viceroy and Governor-General of India.

Vice-Patrons :

- His Excellency the Right Hon'ble WILLIAM BARON
SANDHURST, G.C.I.E.,
Governor of Bombay.
- His Excellency the Right Hon'ble Sir ARTHUR E. HAVELOCK,
G.C.M.G., G.C.I.E.,
Governor of Madras.
- The Hon'ble Major-General Sir E. H. H. COLLEN, K.C.I.E., C.B.,
Military Member, Viceregal Council.
- The Hon'ble Sir WILLIAM MACKWORTH YOUNG, K.C.S.I., C.S.,
Lieutenant-Governor of the Punjab.
- His Excellency Rear-Admiral A. C. DOUGLAS,
Naval Commander-in-Chief, East Indies.
- His Excellency General Sir W. S. A. LOCKHART, G.C.B., K.C.S.I.,
Commander-in-Chief in India.
- His Excellency Lieutenant-General Sir A. P. PALMER, K.C.B.,
Commanding the Forces, Punjab.
- His Excellency Lieutenant-General Sir GEORGE LUCK, K.C.B.,
Commanding the Forces, Bengal.
- His Excellency Lieutenant-General Sir R. C. LOW, G.C.B.,
Commanding the Forces, Bombay.
- His Excellency Lieutenant-General Sir G. B. WOLSELEY, K.C.B.,
Commanding the Forces, Madras.
-



22
1
2256

Dunning
100 pp
9-18-36
12691

Journal of the United Service Institution of India.

VOL. XXVIII—1899.

CONTENTS.

	PAGE
The First Sikh War, 1845-46. By Lieutenant-Colonel H. M. SINCLAIR, R.E.	1
From the Punjab Frontier to Uganda. By Lieutenant E. G. VAUGHAN, Deputy Assistant Commissary General	25
The Third Burmese War 1825-37. By Major A. KEENE, D.S.O., R.A.	34
The Creation and Maintenance of a Reserve of Officers for the Indian Army. By Captain A. E. ATKIN, I.S.O.	56
The Mobility and Individual Training of Our Indian Cavalry. By an Indian Cavalry Officer	68
Cold Steel, and Indian Swordsmanship. By Mr. P. BRAMLEY, North-Western Provinces and Oudh Police	74
Shikar as a Training for Scouts. By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	88
Ambulance Work in Hill Warfare. I. By an Army Surgeon	91
Some Foreign Articles of Special Interest—	
Should Corps Artillery be retained or should the Combined Artillery be distributed among the Divisions	109
Trials against Armour Plates... ..	125
List of Medallists of the Institution	128
A few Short Notes on the Administration of the United States Army in the Philippines. By Captain S. S. LONG, Deputy Assistant Adjutant General, Hongkong	129
A Plea and Suggestion for a Recruiting Department for India. By Captain R. W. FARCOS, District Recruiting Officer, Pathan District	139
Ambulance Work in Hill Warfare. II. Concluded. By an Army Surgeon	146
Battles of the Deccan, No. 1—Assaye. By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	164
Insanitary Cantonments. By Captain H. F. THUILLIER, R.E.	169
On Marching. By Major B. M. SKINNER, R.A.M.C.	179

	PAGE
Some Foreign Articles of Special Interest—	
Horse Artillery in the Cavalry Fight	183.
A Portable Electric Field-Railway	187
List of Medallists of the Institution	189
List of Essays received for the Gold Medal for 1899	190
I.—Gold Medal Prize Essay.—The Tactical Principles and Details best suited to Warfare on the Frontiers of India.—By Colonel J. P. C. NEVILLE, A. Q. M. G., Madras Command	191
The Second Sikh War, 1848-49.—By Lieutenant-Colonel H. M. SINCLAIR, R.E., Assistant Military Secretary, Bengal	224
II.—The Tactical Principles and Details best suited to Warfare on the Frontiers of India.—By Lieutenant-Colonel H. H. HART, R.E.	244
Some Remarks on the present state of the Indian Volunteer Force, and a proposal for its Reorganisation as Militia.—By Lieutenant E. DAWSON, Upper Burma Volunteer Rifles	273
The Battleship : A Study in Evolution.—By Captain B. SETON, I.M.S., 1st Central India Horse	285
Battles of the Deccan, No. II. Argaum.—By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	295
A New System of Field Hospitals and Ambulance for Hill Warfare.—By M. Ch.	300
Some Foreign Articles of Special Interest—	
On Dragon and Captive Balloons	306
Award of Premia for Articles, etc.	307
List of Medallists of the Institution	308
"Stonewall Jackson"—By Colonel E. G. BARROW, C.B., Deputy Secretary, Military Department	309
III.—The Tactical Principles and Details best suited to Warfare on the Frontiers of India.—by Captain E. PEACH, 3rd Madras Light Infantry	329
The Story of the American Civil War of 1861-65.—By Lieutenant-Colonel F. M. RUNDALL, D.S.O., Commanding 1st Battalion, 4th Gurkha Rifles	361
Battles of the Deccan, No. III. The Siege of Gawilghur.—By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	421
Notes on Ewing's Patent Single Rail Tramway with reference to its adaptability to Military Purposes.—By Lieutenant-Colonel F. F. R. BURGESS, I.S.C.	425
A New Stretcher.—By Lieutenant-Colonel C. J. MCCARTIE, I.M.S.	431
Some Foreign Articles of Special Interest—	
A new Range-finder	432
List of Medallists of the Institution	434

United Service Institution of India.

LIST OF MEMBERS.

On 1st January 1899.

Patron :

His Excellency the Right Hon'ble VICTOR ALEXANDER BRUCE,
EARL OF ELGIN and KINCARDINE, P. C., L. L. D., Lord Bruce
of Kinloss and Lord Bruce of Torry in the Kingdom of
Scotland and Baron Elgin of Elgin in the United
Kingdom, G.M.S.I., G.M.I.E.,
Viceroy and Governor-General of India.

Vice-Patrons :

- His Excellency the Right Hon'ble WILLIAM BARON
SANDHURST, G.C.I.E.,
Governor of Bombay.
- His Excellency the Right Hon'ble Sir ARTHUR E. HAVELOCK,
G.C.M.G., G.C.I.E.,
Governor of Madras.
- The Hon'ble Major-General Sir E. H. H. COLLEN, K.C.I.E., C.B.,
Military Member, Viceregal Council.
- The Hon'ble Sir WILLIAM MACKWORTH YOUNG, K.C.S.I., C.S.,
Lieutenant-Governor of the Punjab.
- His Excellency Rear-Admiral A. C. DOUGLAS.
Naval Commander-in-Chief, East Indies.
- His Excellency General Sir W. S. A. LOCKHART, G.C.B., K.C.S.I.,
Commander-in-Chief in India.
- His Excellency Lieutenant-General Sir A. P. PALMER, K.C.B.,
Commanding the Forces, Punjab.
- His Excellency Lieutenant-General Sir GEORGE LUCK, K.C.B.,
Commanding the Forces, Bengal.
- His Excellency Lieutenant-General Sir R. C. LOW, G.C.B.,
Commanding the Forces, Bombay.
- His Excellency Lieutenant-General Sir G. B. WOLSELEY, K.C.B.,
Commanding the Forces, Madras.
-

LIFE MEMBERS.

Rank.	Name.	Corps, &c.
Captain ...	Adye, D. R. ...	6th Infy., Hyd. Contg.
Major, Nawab, C.I.E.	Muhammed Ali Beg, Afser-i-Jang, Afsar- uddula Bahadur	3rd Lancers, Hyd. Contg.
Major-General	Anderson, A. D. ...	Late R. A.
Lt.-Colonel ...	Bell, A. W. C. ...	16th Bombay Infantry.
Major ...	Bond, W. J. H. ...	Asst. Commissary Genl.
Lieutenant ...	Bowker, W. J. ...	2nd Somerset Lt. Infy.
Major ...	Bowring, G. ...	18th Bengal Infantry.
General ...	Browne, H. R. ...	Retired.
Colonel ...	Bruce, E. A. ...	Retired.
Lieutenant ...	Bruce, J. E. L. ...	R. A.
Captain ...	Budd, N. A. H. ...	12th Bombay Infantry.
Major ...	Cadell, A. ...	38th Bengal Infantry.
Captain ...	Campbell, A. A. E. ...	D. A. A. G. for Musketry.
Captain ...	Campbell, A. J. ...	26th Madras Infantry.
Captain ...	Cockerill, G. K. ...	28th Punjab Infantry.
Br.-Genl., K.C.B.	Collet, Sir H. ...	Retired
Colonel ...	Cologan, J. F. FitzG.	Staff Corps.
Lieutenant ...	Davidson-Houston, C. E. D. ...	5th Punjab Infantry.

Dunning
Thayer
 9-18-36
 32691

Journal of the United Service Institution of India.

VOL. XXVIII—1899.

CONTENTS.

	PAGE
The First Sikh War, 1845-46. By Lieutenant-Colonel H. M. SINCLAIR, R.E.	I
From the Punjab Frontier to Uganda. By Lieutenant E. G. VAUGHAN, Deputy Assistant Commissary General	25
The Third Burmese War, 1885-87. By Major A. KEENE, D.S.O., R.A.	34
The Creation and Maintenance of a Reserve of Officers for the Indian Army. By Captain A. E. AITKEN, I.S.C.	56
The Mobility and Individual Training of Our Indian Cavalry. By an Indian Cavalry Officer	68
Cold Steel, and Indian Swordsmanship. By Mr. P. BRAMLEY, North-Western Provinces and Oudh Police	74
Shikar as a Training for Scouts. By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	88
Ambulance Work in Hill Warfare. I. By an Army Surgeon	91
Some Foreign Articles of Special Interest—	
Should Corps Artillery be retained or should the Combined Artillery be distributed among the Divisions	109
Trials against Armour Plates... ..	125
List of Medallists of the Institution	128
A few Short Notes on the Administration of the United States Army in the Philippines. By Captain S. S. LONG, Deputy Assistant Adjutant General, Hongkong	129
A Plea and Suggestion for a Recruiting Department for India. By Captain R. W. FALCON, District Recruiting Officer, Pathan District	139
Ambulance Work in Hill Warfare. II. Concluded. By an Army Surgeon	146
Battles of the Deccan, No. I—Assaye. By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	164
Insanitary Cantonments. By Captain H. F. THUILLIER, R.E.	169
On Marching. By Major B. M. SKINNER, R.A.M.C.	179



	PAGE
Some Foreign Articles of Special Interest—	
Horse Artillery in the Cavalry Fight	183.
A Portable Electric Field-Railway	187
List of Medallists of the Institution	189
List of Essays received for the Gold Medal for 1899	190
I.—Gold Medal Prize Essay.—The Tactical Principles and Details best suited to Warfare on the Frontiers of India.—By Colonel J. P. C. NEVILLE, A. Q. M. G., Madras Command	191
The Second Sikh War, 1848-49 — By Lieutenant-Colonel H. M. SINCLAIR, R.E., Assistant Military Secretary, Bengal	224
II.—The Tactical Principles and Details best suited to Warfare on the Frontiers of India.—By Lieutenant-Colonel H. H. HART, R.E.	244
Some Remarks on the present state of the Indian Volunteer Force, and a proposal for its Reorganisation as Militia.—By Lieutenant E. DAWSON, Upper Burma Volunteer Rifles	273
The Battleship: A Study in Evolution.—By Captain B. SETON, I.M.S., 1st Central India Horse	285
Battles of the Deccan. No II. Argaum.—By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	295
A New System of Field Hospitals and Ambulance for Hill Warfare.—By M. Ch.	300
Some Foreign Articles of Special Interest—	
On Dragon and Captive Balloons	306
Award of Premia for Articles, etc.	307
List of Medallists of the Institution	308
"Stonewall Jackson"—By Colonel E. G. BARROW, C.B., Deputy Secretary, Military Department	309
III.—The Tactical Principles and Details best suited to Warfare on the Frontiers of India.—by Captain E. PEACH, 3rd Madras Light Infantry	329
The Story of the American Civil War of 1861-65.—By Lieutenant-Colonel F. M. RUNDALL, D.S.O., Commanding 1st Battalion, 4th Gurkha Rifles	361
Battles of the Deccan, No. III. The Siege of Gawilghur.—By Captain R. G. BURTON, 1st Infantry, Hyderabad Contingent	421
Notes on Ewing's Patent Single Rail Tramway with reference to its adaptability to Military Purposes.—By Lieutenant-Colonel F. F. R. BURGESS, I.S.C.	425
A New Stretcher.—By Lieutenant-Colonel C. J. MCCARTIE, I.M.S.	431
Some Foreign Articles of Special Interest—	
A new Range-finder	432
List of Medallists of the Institution	434

United Service Institution of India.

LIST OF MEMBERS.

On 1st January 1899.

Patron :

His Excellency the Right Hon'ble VICTOR ALEXANDER BRUCE,
EARL OF ELGIN and KINCARDINE, P. C., L. L. D., Lord Bruce
of Kinloss and Lord Bruce of Torry in the Kingdom of
Scotland and Baron Elgin of Elgin in the United
Kingdom, G.M.S.I., G.M.I.E.,
Viceroy and Governor-General of India.

Vice-Patrons :

His Excellency the Right Hon'ble WILLIAM BARON
SANDHURST, G.C.I.E.,
Governor of Bombay.

His Excellency the Right Hon'ble Sir ARTHUR E. HAVELOCK,
G.C.M.G., G.C.I.E.,
Governor of Madras.

The Hon'ble Major-General Sir E. H. H. COLLEN, K.C.I.E., C.B.,
Military Member, Viceregal Council.

The Hon'ble Sir WILLIAM MACKWORTH YOUNG, K.C.S.I., C.S.,
Lieutenant-Governor of the Punjab.

His Excellency Rear-Admiral A. C. DOUGLAS.
Naval Commander-in-Chief, East Indies.

His Excellency General Sir W. S. A. LOCKHART, G.C.B., K.C.S.I.,
Commander-in-Chief in India.

His Excellency Lieutenant-General Sir A. P. PALMER, K.C.B.,
Commanding the Forces, Punjab.

His Excellency Lieutenant-General Sir GEORGE LUCK, K.C.B.,
Commanding the Forces, Bengal.

His Excellency Lieutenant-General Sir R. C. LOW, G.C.B.,
Commanding the Forces, Bombay.

His Excellency Lieutenant-General Sir G. B. WOLSELEY, K.C.B.,
Commanding the Forces, Madras.

LIFE MEMBERS.

Rank.	Name.	Corps, &c.
Captain ...	Adye, D. R. ...	6th Infy., Hyd. Contg.
Major, Nawab, C.I.E.	Muhammed Ali Beg, Afser-i-Jang, Afsar- uddula Bahadur	3rd Lancers, Hyd. Contg.
Major-General	Anderson, A. D. ...	Late R. A.
Lt.-Colonel ...	Bell, A. W. C. ...	16th Bombay Infantry.
Major ...	Bond, W. J. H. ...	Asst. Commissary Genl.
Lieutenant ...	Bowker, W. J. ...	2nd Somerset Lt. Infy.
Major ...	Bowring, G. ...	18th Bengal Infantry.
General ...	Browne, H. R. ...	Retired.
Colonel ...	Bruce, E. A. ...	Retired.
Lieutenant ...	Bruce, J. E. L. ...	R. A.
Captain ...	Budd, N. A. H. ...	12th Bombay Infantry.
Major ...	Cadell, A. ...	38th Bengal Infantry.
Captain ...	Campbell, A. A. E. ...	D. A. A. G. for Musketry.
Captain ...	Campbell, A. J. ...	26th Madras Infantry.
Captain ...	Cockerill, G. K. ...	28th Punjab Infantry.
Br.-Genl., K.C.B.	Collet, Sir H. ...	Retired
Colonel ...	Cologan, J. F. FitzG.	Staff Corps.
Lieutenant ...	Davidson-Houston, C. E. D. ...	5th Punjab Infantry.

LIFE MEMBERS—continued.

Rank.	Name.	Corps, &c.
Col., D.S.O. ...	Deshon, C. J. ...	Late R. A.
Colonel, C.B., C.I.E.	Durand, A. G. A. ...	C. I. Horse.
Lt.-Col., <i>Bart.</i> , C.B.	Durand, Sir E. L. ...	Retired.
Captain ...	Dewing, R. H. ...	16th Madras Infantry.
Major ...	Eardley-Wilmot, A. ...	R. A.
Major, M.D. ...	Edwards, W. R. ...	I. M. S.
Major ...	Egerton, R. G. ...	"Q. O." Corps of Guides
The Hon'ble, K.C.S.I., C.I.E.	Elliot, Sir C. A. ...	C. S.
Esquire, M.D. ...	Evans, Griffith ...	Retired.
Captain ...	Ewbank, W. ...	R. E.
Lt.-Colonel ...	Finn, H. ...	21st Lancers.
Lt.-Colonel ...	Francis, G. F. ...	5th Bombay Cavalry.
Captain ...	Frazer, G. S. ...	6th Infantry, H. C.
Lieutenant ...	Fulton, H. T. ...	2-2nd Gurkhas.
Maj.-Genl., C.B.	Gatacre, J. ...	Retired.
Major ...	Gibbings, H. C. C. ...	Retired.
Maj.-Genl., C.B.	Gosset, M. W. E. ...	Retired.
Lt.-Colonel ...	Gowan, W. E. ...	Retired.
Lt.-Colonel ...	Graves, S. H. P. ...	40th Pathans.
Colonel, G.C.S.I.,	Gwalior, H. H. Maharaj Adhiraj Sir Madho Rao Sindhia, Maha- raja of—	

LIFE MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	Haig, D. ...	7th Hussars.
Colonel ...	Hanna, H. B. ...	Retired.
Captain ...	Headlam, J. E. W. ...	R. H. A.
Col., K.C.I.E., C.B.	Holdich, Sir T. H. ...	Late R. E.
Lt.-Colonel ...	James, M. ...	Late R. A.
Captain ...	Kaye, W. J. P. ...	30th Punjab Infantry.
Major ..	Kerrich, G. S. ...	1st Madras Lancers.
Colonel ...	King-Harman, M. J.	S. C.
Lt.-Colonel, G.C.I.E., C.B.	Kuch Behar, H. H. Maharaja Sir Nri- pendra Narayan, Bahadur of—	6th Bengal Cavalry.
Lt.-Colonel ...	Lawford, E. E. M. ...	1st Madras Lancers.
Lieutenant ...	Lee, A. W. H. ...	16th Madras Infantry.
Lt.-Genl., C.B....	Little, H. A. ...	Retired.
Lt.-Colonel ...	Lowry, W. H. ...	28th Madras Infantry.
Lt.-Col., C.I.E. ...	McKay, H. K. ...	I. M. S.
Major ...	Manifold, J. F. ...	R. A.
Major ...	Mercer, H. F. ...	R. A.
Colonel ...	Morley, F. ...	Retired.
Lt.-Col., C.I.E....	Muir, C. W. ...	17th Bengal Cavalry.
Lieutenant ...	Muscroft, W. St. C. ...	C. I. Horse.

LIFE MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel the Hon'ble. Esquire ...	Noel, E. ...	1st Rifle Brigade.
	Ogilvie, G. M. ...	C. S.
Lt.-Colonel ...	Olivier, H. D. ...	R.E., B. B. and C.I. Ry. Vols.
Lt.-Colonel ...	Phayre, A. ..	3rd Bombay Cavalry.
Captain ...	Pilleau, A. L. ...	3rd Bombay Infantry.
Lt.-Colonel ...	Pollock, J. A. H. ...	1st Sikh Infantry.
Lt.-Col., D.S.O. .	Presgrave, E. R. J. ...	10th Madras Infantry.
Major-General, C. B., C. S. I., A.-D.-C.	Protheroe, M. ...	Comding. Burma Dist.
Captain ...	Ray, M. C. R. E. ...	7th Bengal Infantry.
Lt.-Colonel ...	Renny, A, MacW ...	7th Bengal Cavalry.
Field Marshal Right Hon'ble, v.c., K.P. G.C.B., G.C.S.I., G.C.I.E.	Roberts, Lord ...	Commanding the Forces in Ireland.
Captain ...	Roe, C. H. ...	R. E.
Lt.-General, C.B., C.S.I.	Sanford, G. E. L. S...	Late R. E.
Colonel ...	Sawyer, H. A. ...	S. C.
Captain ...	Scharlieb, W. K. ...	5th Bengal Cavalry.
Captain ...	Seton, B. G. ...	I. M. S.
Major ...	Smith, J. G. ...	Asst. Commissary Genl.
Colonel ...	Stainforth, W. ...	Retired.
Captain ...	Stewart, J. M. ..	2-5th Gurkha Rifles.

LIFE MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major-General, K.C.B., A.-D.-C.	Stewart, Sir R. C. ...	
Major ...	Stockley, V. M. ...	16th Bengal Cavalry.
The Hon'ble, C.S.I.	Tupper, C. L. ...	C. S.
Major ...	Turner, G. H. ...	26th Bombay Infantry.
Colonel, v. c. ...	Vousden, W. J. ...	S. C.
Major ...	Williams, G. ...	R. E.
Colonel ...	Willock, G. W. ...	Retired.
Colonel ...	Wilson, C. W. H. ...	Retired.
Major ...	Worlledge, J. F. ...	35th Sikhs.
• Captain ...	Wynch, F. J. H., ...	37th Bengal Infantry.
Major ...	Yate, A. C. ...	29th Bombay Infantry.
The Hon'ble, K.C.S.I.	Young, Sir W. M. ...	Lt. Governor, Punjab.
Captain ...	Younghusband, L. N.	19th Bengal Lancers.

LIFE MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel the Hon'ble.	Noel, E. ...	1st Rifle Brigade.
Esquire ...	Ogilvie, G. M. ...	C. S.
Lt.-Colonel ...	Olivier, H. D. ...	R.E., B. B. and C.I. Ry. Vols.
Lt.-Colonel ...	Phayre, A. ..	3rd Bombay Cavalry.
Captain ...	Pilleau, A. L. ...	3rd Bombay Infantry.
Lt.-Colonel ...	Pollock, J. A. H. ...	1st Sikh Infantry.
Lt.-Col., D.S.O. .	Presgrave, E. R. J. ...	10th Madras Infantry.
Major-General, C. B., C. S. I., A.-D.-C.	Protheroe, M. ...	Comding. Burma Dist.
Captain ...	Ray, M. C. R. E. ...	7th Bengal Infantry.
Lt.-Colonel ...	Renny, A, MacW ...	7th Bengal Cavalry.
Field Marshal Right Hon- 'ble, v.c., K.P. G.C.B., G.C.S.I., G.C.I.E.	Roberts, Lord ...	Commanding the Forces in Ireland.
Captain ...	Roe, C. H. ...	R. E.
Lt.-General, C.B., C.S.I.	Sanford, G. E. L. S...	Late R. E.
Colonel ...	Sawyer, H. A. ...	S. C.
Captain ...	Scharlieb, W. K. ...	5th Bengal Cavalry.
Captain ...	Seton, B. G. ...	I. M. S.
Major ...	Smith, J. G. ...	Asst. Commissary Genl.
Colonel ...	Stainforth, W. ...	Retired.
Captain ...	Stewart, J. M. ..	2-5th Gurkha Rifles.

LIFE MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major-General, K.C.B., A.-D.-C.	Stewart, Sir R. C. ...	
Major ...	Stockley, V. M. ...	16th Bengal Cavalry.
The Hon'ble, C.S.I.	Tupper, C. L. ...	C. S.
Major ...	Turner, G. H. ...	26th Bombay Infantry.
Colonel, v. c. ...	Vousden, W. J. ...	S. C.
Major ...	Williams, G. ...	R. E.
Colonel ...	Willock, G. W. ...	Retired.
Colonel ...	Wilson, C. W. H. ...	Retired.
Major ...	Worlledge, J. F. ...	35th Sikhs.
Captain ...	Wynch, F. J. H. ...	37th Bengal Infantry.
Major ...	Yate, A. C. ...	29th Bombay Infantry.
The Hon'ble, K.C.S.I.	Young, Sir W. M. ...	Lt. Governor, Punjab.
Captain ...	Younghusband, L. N.	19th Bengal Lancers.

ORDINARY MEMBERS.

Rank.	Name.	Corps, &c.
Colonel ...	Abbott, F. ...	7th Bombay Lancers.
Colonel, C.B. ...	Abbott, H. A. ...	S. C.
Major, D.S.O. ...	Abbott, H. E. S. ...	R. E.
Lieutenant ...	Adam, F. L. ...	Scots Guards.
Lt.-Col., V.C., C.B.	Adams, R. B. ...	(Queen's Own) Guides.
Captain ...	Agnew, Q. G. K. ...	1st Royal Scots Fus.
The Hon'ble, M.A.	Aikman, R. S. ...	C. S.
Major ...	Aitken, A. E. ...	Dy. Asst. Adj. Genl.
Lt.-Col., D.S.O.	Aldworth, W. ...	2nd D. of Cornwall's L. I.
Lieutenant ...	Alexander, H. S. ...	S. C.
Captain ...	Alexander, R. S. ...	7th Bengal Cavalry.
Major ...	Allen, A. J. W. ...	1st E. Kent Regt.
Major ...	Allen, R. F. ...	R. E.
Major ...	Allen, W. H. ...	Asst. Commy. General.
Captain ...	Anderson, C. C. ...	26th Punjab Infantry.
Major ...	Anderson, J. H. A. ...	2nd Manchester Regt.
Major ...	Angelo, F. W. P. ...	9th Bengal Lancers.
Lieutenant ...	Annesley, J. H. A. ...	18th Hussars.
Major ...	Aplin, P. J. H. ...	7th Bombay Infantry.
Captain ...	Archer, C. ...	S. C., Political Agent.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Armstrong, J. C. ...	1st Royal Inniskilling Fusiliers.
Captain ...	Arnold, A. S. ...	1st Madras Lancers.
Maj.-General ...	Arnott, N. ...	R. E., Dir. Genl. Mily. Works.
Lt.-Colonel, v.c.	Aylmer, F. J. ...	R. E., A. A. Genl.
Colonel ...	Babington, J. M. ...	Asst. Adjt. General.
Captain ...	Badcock, A. J. ...	Dy. Asst. Comy. Genl.
Maj.-Genl., C.B., C.S.I.	Badcock, A. R. ...	Qr. Mr. Genl. in India.
Captain ...	Baddeley, C. E. ...	R. E.
Colonel ...	Baden-Powell, R. S. S.	5th Dragoon Guards.
Major ...	Bailward, A. C. ...	R. A.
Lt.-Colonel ...	Balfe, E. ...	Dy. J. A. General.
Major ...	Balfour, J. H. ...	13th Bengal Lancers.
Lieutenant ...	Balfour, P. ...	Highland L. I.
Captain ...	Ballard, C. R. ...	1st Bn. Norfolk Regt.
Captain ...	Banbury, W. E. ...	25th Madras Infantry.
Colonel ...	Barlow, J. A. ...	Asst. Adjt. General.
Br.-General, C.B., C.M.G., A.-D.-C.	Barnard, J. H. ...	Comdg. Mandalay Dist.
Lt.-Col., D.S.O.	Barrett, A. L. ...	43rd Gurkha Rifles.
Lt.-Col., C.M.G., D.S.O.	Barrow, A. F. ...	12th Bengal Infantry.
Colonel, C.B. ...	Barrow, E. G. ...	Depy. Secy., Mily. Dept.
Captain ...	Barrow, G. deS. ...	4th Bengal Cavalry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps &c.
Lieutenant ...	Basevi, W. H. F. ...	31st Madras Infantry.
Rev. ...	Bateson, J. H. ...	
Lt.-Colonel ...	Batten, A. C. ...	2nd Punjab Cavalry.
Captain ...	Batten, F. G. ...	1st Madras Infantry.
Lieutenant ...	Bayley, L. S. ...	R. A.
Major, D.S.O. ...	Bayly, A. W. L. ...	Asst. Adjt. General.
Captain ...	Bazalgette, L. H. ...	2nd Suffolk Regiment.
Major ...	Beale, A. ...	5th Bombay Infantry.
Captain ...	Beames, D. ...	19th Punjab Infantry.
Lt.-Colonel ...	Beatson, C. H. ...	I. M. S.
Major, C.B. ...	Beatson, S. B. ...	11th Bengal Lancers.
Esquire ...	Becher, A. R. ...	C. S.
Captain ...	Becher, H. W. ...	2nd West Riding Regt.
Major ...	Bell-Irving, A. ...	R. A.
Maj.-Genl., C.B.	Bengough, H. M. ...	Retired.
Captain ...	Bentinek, R. J. ...	S. C.
The Hon'ble, M.E., M.I.C.E.	Beresford, J. S. ...	C. S.
Major ...	Beresford, W. R. H. ...	D. A. A. G. for Instn.
Major ...	Bethell, H. A. ...	R. A.
Major ...	Bewicke, H. B. N. ...	Retired.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	Bewicke-Copley, R. C. A. B.	2nd King's Royal R. Corps.
Captain ...	Beynon, H. L. N. ...	R. A.
Major, D.S.O. ...	Beynon, W. G. L. ...	1-3rd Gurkha Rifles.
Major ...	Biddulph, S. F. ...	19th Bengal Lancers.
Major, D.S.O. ...	Biggs, H. V. ...	R. E., Executive Engr.
Captain ...	Bingley, A. H. ...	7th Bengal Infantry.
Major-General, K.C.I.E., C.B.	Bird, Sir G. C. ...	Commanding Punjab Frontier Force.
Lt.-Colonel ...	Bird, W. J. B. ...	Contr. of Mily. Accts.
Lt.-Colonel ...	Birdwood, W. S. ...	10th Bombay Infantry.
Maj.-Genl., C.B.	Biscoe, W. W. ...	Staff Corps.
Colonel, K.C.I.E.	Bisset, Sir W. S. S. ...	R. E.
Bridgr.-Genl ...	Black, W. C. ..	S. C.
Captain ...	Bliss, L. H. P. ...	1st Duke of Cornwall's Lt. Infantry.
Major ...	Blood, W. P. ...	2nd Royal Irish Fus.
Captain ...	Boddam, E. B. C. ...	2-5th Gurkha Rifles.
Captain ...	Boileau, F. R. F. ...	R. E.
Captain ...	Bonham-Carter, H. ...	R. E., Public Works Dept.
Major, D.S.O. ...	Borradaile, H. B. ...	32nd Pioneers.
Lt.-Colonel ...	Borton, A. C. ...	U. Active List.
Captain ...	Bosanquet, J. T. I. ...	2nd Border Regt.
Captain ...	Boulnois, W. A. ...	R. A.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	Bower, H. ...	17th Bengal Cavalry.
Major ...	Bowes, W. H. ...	D. A. A. G., Khyber Brigade.
Colonel, C.S.I....	Brackenbury, M. C....	R. E.
Captain ...	Bradley, H. V. ...	2-2nd Gurkha Rifles.
Captain ...	Bradshaw, F. E. ...	Asst. Commr.
Lt.-Colonel ...	Bradshaw, L. J. E. ...	35th Sikhs.
Esquire ...	Bramley, P. B. ...	Dist. Supdt., Police.
Lieutenant ...	Bredin, A. ...	10th Madras Infantry.
Captain, D.S.O.	Bretherton, G. H. ...	Dy. Asst. Commy. Genl.
Colonel, C.B. ...	Broadbent, J. E. ...	R. E.
Major ...	Bromfield, F. W. ...	1st Bn. Cheshire Regt.
Captain ...	Brooking, H. T. ...	D. A. A. G., Rangoon.
Major ...	Broughton, E. C. ...	2nd York and Lancas- ter Regt.
Captain ...	Brown, W. H. ...	25th Madras Infantry.
Colonel, D.S.O.	Browne, A. G. F. ...	2-4th Gurkha Rifles.
Lieutenant ...	Browne, H. J. P. ...	1-5th Gurkha Rifles.
Lt.-Colonel ...	Browne, L. J. ...	17th Bengal Infantry.
Major ...	Browne, R. A. ...	1st Border Regiment.
Major ...	Brownlow, C. B. ...	4th Punjab Infantry.
Lieutenant ...	Bruce, J. ...	1st Madras Lancers.
Lieutenant ...	Bruel, F. A. ...	1st Gloucestershire Regt.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	Brunker, J. M. S. ...	R. A.
Lieutenant ...	Brunner, F. W. ...	R. E.
Captain ...	Brush, J. E. R. ...	1st Royal Irish Fus.
Captain ...	Bryan, T. W. G. ...	R. A.
Captain ...	Buck, W. T. ...	2nd Durham L. I.
Lt.-Colonel ...	Buckland, P. A. ...	Supdt., Army Clothing.
Major ...	Bullock, G. M. ...	1st Devonshire Regt.
Major ...	Bunbury, W. E. ...	Dy. Asst. Qr. Mr. Genl.
Captain ...	Burlton, P. S. M. ...	Deputy Commissioner.
Major ...	Burn, A. E. P. ...	40th Pathans.
Esquire ..	Burn, R. N. ...	C. S.
Major ...	Burn-Murdoch, J. ...	R. E.
Captain ...	Burrard, W. D. ...	R. A.
Major ...	Burrowes, H. G. ...	R. A.
Colonel ...	Burton, F. C. ...	S. C., Offg. Colonel on Staff, Rawal Pindi.
Captain ...	Burton, R. G. ...	1st Infantry, H. C.
Major ...	Butcher, A. E. A. ...	R. A.
Major ...	Bythell, W. J. ...	R. E.
Maj.-Genl., C.B.	Caldecott, F. J. ...	Retired R. A.
Captain ...	Campbell, C. F. ...	6th Bengal Cavalry.
Major ...	Campbell, C. P. ...	C. I. Horse.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Campbell, G. P. ...	25th Punjab Infantry.
Lieutenant ..	Campbell, I. H. ...	7th Bengal Cavalry.
Colonel ...	Campbell, L. R. H. D.	Comdg. at Chitral.
Captain ..	Campbell, L. W. Y. ...	8th Madras Infantry.
Major ...	Campbell, W. ...	1st Gordon Highlanders.
Captain ...	Campbell, W. N. ...	2nd Punjab Cavalry.
Lt.-Colonel ...	Candy, J. M. ...	14th Bombay Infantry.
Lieutenant ...	Capper, A. S. ...	C. I. Horse.
Lt.-Colonel ...	Capper, W. B. ...	1st Northamptonshire Regiment.
Major ...	Carbonaro, E. ...	17th Bengal Infantry.
Captain ...	Cardew, F. G. ...	S. C., Asst. Secy., Mily. Dept.
Esquire ...	Carey, A. D. ...	C. S.
Colonel, C. I. E., A.-D.-C., C. S.	Carnac, J. H. Rivett...	Retired.
Captain ...	Carnell, N. M. ...	Burma Railway Volun- teers.
Major ..	Carpendale, P. M. ...	21st Punjab Infantry.
Captain ...	Carpendale, W. M. ...	8th Bengal Cavalry.
Major ...	Carson, W. P. ...	Retired List.
Major ...	Carter, F. C. ...	2nd Royal Berkshire Regiment.
Captain ...	Carthew-Yorstoun, M. E.	4th Bombay Cavalry.
Captain ...	Cartwright, C. M. ...	6th Bombay Cavalry.
Lieutenant ...	Cattell, G. L. ...	25th Madras Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	Cavendish, C. C. ...	2nd Highland L. I.
Colonel ...	Chamberlain, N. F. FitzG.	S. C.
Lt.-Genl., v. c., C. B.	Channer, G. N. ...	Retired List.
Lt.-Col., v. D. ...	Chanter, E. J. ...	Late 2nd P. Vol. Rifles.
Lt.-Colonel ...	Chapman, L. J. A. ...	R. A.
Captain ...	Chenevix-Trench, G. F.	S. C., Supy. List.
Captain ...	Chesney, N. E. ...	2-5th Gurkhas.
Lieutenant ...	Cheyne, A. Y. ...	15th Bengal Lancers.
Lt.-Colonel ...	Chisholme, J. J. S. ...	5th Lancers.
Captain ...	Chitty, W. W. ...	19th Bombay Infantry.
Lieutenant ...	Chrystie, G. ...	5th Punjab Cavalry.
H. E. Lt.-Genl., K.C.B.	Clarke, Sir C. M. ...	
Captain ...	Clarke, T. E. ...	2nd Royal Ins. Fusiliers.
Captain ...	Clay, C. H. ...	43rd Gurkha Rifles.
Lieutenant ...	Clay, S. ...	43rd Gurkha Rifles.
Lieutenant ...	Clayton, E. R. ...	2nd Oxfordshire L. I.
Br.-General ...	Clifford, R. M. ...	Comdg. Allahabad Dist.
Lieutenant ...	Close, L. H. ...	R. E.
Lt.-Colonel ...	Clothier, R. F. ...	27th Madras Infantry.
Captain ...	Coates, J. U. ...	R. A.
Lt.-Colonel ...	Coats, G. H. B. ...	25th Punjab Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lieutenant ...	Coldstream, W. M. ...	R. E.
Major ...	Cole, A. W. G. L. ...	1st R. Welsh Fusiliers.
Captain ...	Cole, E. H. ...	11th Bengal Lancers.
Lt.-Colonel ...	Cole, H. H. ...	Late R. E.
Major ...	Coleman, W. F. ...	2nd Suffolk Regiment.
The Hon'ble Major-General, K.C.I.E., C.B.	Collen, Sir, E. H. H.	Military Member of the Viceregal Council.
Lt.-Colonel ...	Collette, C. H. ...	1st Shropshire L. I.
Captain ...	Colomb, F. C. ...	42nd Gurkha Rifles.
Captain ...	Combe, L. ...	1st Scottish Rifles.
Captain ...	Comins, H. ...	1st Bengal Infantry.
Captain ...	Couner, R. ...	1st Gloucestershire Regt.
Lt.-Colonel ...	Cook, W. ...	30th Madras Infantry.
Maj.-General ...	Cooke, T. A. ...	Comdg. Sind District.
Captain ...	Cookson, G. A. ...	16th Bengal Cavalry.
Captain ...	Cooper, H. A. ...	1st Sikh Infantry.
Lieutenant ...	Corbyn, E. C. ...	18th Bengal Lancers.
Lt.-Col., D.S.O....	Couchman, G. H. H.	2nd Somersetshire L. I.
Lt.-Colonel ...	Courtenay, E. R. ...	11th Hussars.
Lieutenant ...	Cox, C. E. S. ..	1st Madras Lancers.
Captain ...	Cox, H. V. ...	21st Madras Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Cowper, M. ...	10th Bengal Lancers.
Colonel ...	Craigie, J. H. S. ...	Asst. Adjutant Genl.
Colonel, v.c. ...	Creagh, O'M. ...	Asst. Qr.-Mr. General.
Captain ...	Crookshank, C. deW. ...	R. E.
Lieutenant ...	Crothwaite, J. G. ...	Asst. Commissioner.
Captain ...	Crowe, J. H. V. ...	R. A.
Major ...	Crowther, R. T. ...	23rd Pioneers.
Lieutenant ...	Cruddas, H. W. ...	38th Bengal Infantry.
Lieutenant ...	Cumberledge, C. J. ...	23rd Bombay Infantry.
Lieutenant ...	Cunningham, A. H. ...	R. E.
Captain ...	Cuppige, W. A. ...	5th Bengal Infantry.
Major, D.S.O. ...	Cure, H. C. ...	1st Gloucestershire Regt.
Lt.-Col., C.B. ...	Currie, T. ...	1st N. Staffordshire Regt.
Captain ...	Dallas, A. G. ...	16th Lancers.
Maj.-Genl., C.B. ...	Dalrymple, W. L. ...	
Captain, C.I.E. ...	Daly, H. ...	Dy. Secy. Foreign Dept.
Captain ...	Daunt, W. D. ...	C. I. Horse.
Lieutenant ...	Davidson, S. R. ...	S. C.
Captain ...	Davidson, W. L. ...	17th Bengal Infantry.
Major ...	Davies, A. M. ...	R. A. M. Corps.
Captain ...	Davies, H. R. ...	2nd Oxfordshire L. Infy.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Davis, C. ...	1st Bengal Lancers.
Major ...	Davison, K. S. ..	2nd Bengal Lancers.
Lieutenant ...	Davy, R. M. M. ...	1st Gloucestershire Regt
Major ...	Dawkins, H. S. ...	R. A.
Lieutenant ...	Dawson, E. ...	Moulmein Vol. Rifles.
Captain ...	Day, A. C. FitzR. ...	1st Dorsetshire Regt.
Lt.-Colonel ...	DeBrath, E. ...	Dy. Secy. to Govt., M. D.
Lieutenant ...	deLabilliere, E. G. D.	38th Bengal Infantry.
Captain, C.M.G., C.I.E.	DeLæssøe, A. F. ...	Pol. Agent.
Captain, D.S.O...	DeLisle, H. DeB. ..	2nd Durham L. Infy.
Captain ...	Denne, A. R.	2nd Madras Infantry.
Colonel ...	Des Vœux, C. H. ...	36th Sikhs.
Captain ...	Dick, A. R. ...	2nd Punjab Cavalry.
Lt.-Colonel, v.c.	Dick-Cunyngham, W. H.	2nd Gordon Highlanders.
Lieutenant ...	Dickson, J. H. ...	Dy. A. C. Genl.
Captain ...	Dill, R. ...	2nd Yorkshire L. I.
Captain • ...	Dillon, G. F. H. ...	Dy. A. A. Genl.
Captain ...	Dixon, P. E. ...	R. E.
Major ...	Dobbin, W. J. K. ...	1st Sikh Infantry.
Lieutenant ...	Donnan, W. ...	Asst. Mily. Accountant.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Colonel, D.S.O...	Dorward, A. R. F. ...	R. E.
H. E. Rear-Admiral	Douglas, A. C. ...	Naval C.-in-C. East Indies.
Captain ...	Douglas, J. A. ...	D. A. Q. M. Genl., I. B.
Captain ...	Dowding, H. H. H. ...	2nd Essex Regt.
Captain ...	Dowell, G. C. ...	R. A.
Captain ...	Drummond, E. J. ...	2-2nd Gurkha Rifles.
Major, C.I.E. ...	Drummond, F. H. R. ...	11th Bengal Lancers.
Colonel, C.I.E. ...	Duff, B. ...	Mily. Secy. to H. E. the C.-in-C. in India.
Captain ...	Duff, G. M. ...	R. E.
Major ..	du Moulin, L. E. ...	2nd Royal Sussex Regt.
Lt.-Colonel, M.D.	Duncan, A. ...	I. M. S.
Major, M.B. ...	Duncan, G. ...	I. M. S.
Captain ...	Duncan, S. ...	1st Gloucestershire Regt.
Major ...	Dunsterville, K. S. ...	R. A.
Lt.-Colonel ...	Duperier, H. W. ...	R. E.
K.C.S.I., K.C.I.E.	Durand, Sir H. M. ...	C. S.
Colonel ...	Duthy, A. E. ...	R. A.
Colonel, C.B. ...	Dyce, G. H. C. ...	Comdg. Tochi Force.
Major ...	Eardley-Wilmot, I. ...	18th Bengal Lancers.
Captain, D.S.O. ...	East, L. W. P. ...	R. A.
Lieutenant ...	Eccles, C. J. ...	16th Lancers.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Edwards, C. G. F. ...	5th Punjab Cavalry.
Captain, D.S.O. ...	Edwards, F. J. M. ...	D. A. A. General.
Major, D.S.O. ...	Edwards, J. B. ...	C. I. Horse.
Captain ...	Egerton, C. P. ...	S. C.
Br.-Genl., K.C.B.	Elles, Sir E. R. ...	Comdg. Peshawar Dist.
Major-General, C.B., D.S.O.	Elliot, E. L. ...	I. G., Cavalry in India.
Major-General, C.B.	Evans, H. M. ...	
Major ...	Evatt, J. T. ...	39th Bengal Infantry.
Captain ...	Everett, H. J. ...	1st Somersetshire L. I.
Lt.-Colonel ...	Exham, R. ...	R. A. M. C.
Captain ...	Fagan, H. R. ...	1st Punjab Infantry.
Lieutenant ...	Fagan, L. E. ...	S. C., 6th Madras Infy.
Major ...	Faithfull, H. T. ...	33rd Punjab Infantry.
Captain ...	Falcon, R. W. ...	4th Sikhs.
Captain ...	Fane, V. B. ...	1st Punjab Cavalry.
Esq., C.S.I., C.S.	Fanshawe, A. U. ...	Dir.-Genl. of the Post Office in India.
Esq., C.S. ...	Fanshawe, H. C. ...	Chief Secy. to the Pun- jab Govt.
Captain ...	Fasken, W. H. ...	10th Bengal Lancers.
Captain ...	Faulknor, A. A. M. M.	2nd Bombay Infantry.
Captain ...	Fayrer, J. O. S. ...	1-5th Gurkha Rifles.
Major ...	Fegen, M. F. ...	R. A.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Fell, R. B. ...	1st Scottish Rifles.
Major, D.S.O. ...	Fendall, C. P. ...	R. A.
Major ...	Fenton, A. B. ...	A. A. General.
Lieutenant ...	Fergusson, A. C. ...	R. A.
Captain ...	Fergusson, H. C. ...	2nd Bn. H. L. Infantry.
Major, D.S.O. ...	Ferrier, J. A. ...	R. E.
Captain ...	Finch, C. ...	1st Bengal Lancers.
Captain ...	Finch, E. H. F. ...	D. A. A. G. for Musketry
Major ...	Fink, G. H. ...	I. M. S.
Esq., C.S.I., C.S....	Finlay, J. F. ..	Secy. to Govt., Finance Department.
Major ...	Finnis, H. ...	R. E., D. A. A. G. for R.E.
Captain ...	Firth, E. W. A. ...	9th Madras Infantry.
Captain ...	Fisher, J. ...	1-2nd Gurkha Rifles.
Lt.-Colonel ...	Fitzgerald, C. M. ...	A. C. General.
Colonel ...	Fletcher, A. F. ...	R. A., I. G. of Ordnance.
Lieutenant ...	Foord, E. R. ...	S. C., Asst. Mily. Ac- countant.
Captain ...	Forbes, L. A. ...	S. C.
Captain ...	Ford, C. A. W. ...	4th Bombay Infantry.
Major ...	Forde, L. ...	R. A.
Captain ...	Forestier-Walker, C.E.	R. A.
Captain ...	Forth, C. T. W. ...	30th Punjab Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel ...	Foss, K. M. ...	26th Madras Infantry.
Col., C.I.E., Q.H.P.	Franklin, B. ...	I. M. S.
Captain ...	Fraser, N. G. ...	4th Bombay Cavalry.
Major ...	Fuller, R. W. ...	R. A.
Captain ...	Fyffe, B. O. ...	1st Gloucestershire Regt.
Captain ...	Galloway, F. L. ...	R. A.
Lt.-Colonel ...	Gallwey, E. J. ...	2nd Somerset L. Infy.
Lt.-Colonel ...	Garbett, C. H. V. ...	2nd Bengal Lancers.
Lieutenant ...	Gardner, R. M. S. ...	1st Gloucestershire Regt.
Lieutenant ...	Garratt, H. S. ..	3rd Bombay Infantry.
Lt.-Colonel ...	Gartside-Tipping, R. F.	1st Bengal Lancers.
Brig.-Genl., K.C.B. A.-D.-C.	Gaselee, Sir A. ...	Offg. Q. M. G. in India.
Lt.-Colonel ...	Gastrell, G. D. C. ...	8th Bengal Infantry.
Major-Genl., K.C.B., D.S.O.	Gatacre, Sir W. F. ...	Comdg. Eastern District.
Lieutenant ...	Gaussen, A. W. D. ...	2nd High. Lt. Infantry.
Lt.-Colonel ...	Gibbs, M. I. ...	31st Punjab Infantry.
Captain ...	Giles, A. ...	13th Bengal Infantry.
Captain ...	Glasgow, W. J. T. ...	1st Royal West Surrey Regt.
Lt.-Colonel ...	Glennie, E. ...	R. E.
Lt.-Colonel ...	Goad, H. ...	Dir. Army Remount Department.
Captain ...	Godfrey, S. H. ...	Asst. to the Resident for Leh.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lieutenant ...	Godwin, C. A. C. ...	3rd Punjab Cavalry.
Captain ...	Goodridge, W. S. ...	R. N., Director of Royal Indian Marine.
Lt.-Colonel ...	Gordon, H. K. ...	(Retired). Comdg. Hyderabad Vol. Rifles.
Lt.-Colonel, C.I.E.	Gordon, J. C. F. ...	6th Bengal Cavalry.
Lieutenant ...	Gordon, J. L. R. ...	15th Sikhs.
Captain ...	Gordon, Lincoln ...	Oudh Vol. Rifles.
Colonel ...	Gordon, R. ...	22nd Punjab Infantry.
Major ...	Gordon, S. D. ...	D. A. A. General.
Captain ..	Gordon, W. E. ...	1st Gordon Highlanders.
Major ...	Gore, St. J. C. ...	5th Dragoon Guards.
Major ...	Gosset, E. A. G. ...	2nd Derby : Regiment.
Captain ...	Gough, S. C. ...	5th Bengal Cavalry.
Captain, D.S.O.	Graham, H. W. G. ...	5th Lancers.
Colonel ...	Grant, H. G. ...	U. Active List.
Maj.-Genl., C.B.	Grant, H. F. ...	I. G. of Cavalry England.
Colonel ...	Grant, Jas. ...	S. C.
Lt.-Colonel ...	Grant, S. ...	R. E., Comdg. Madras S. & M.
Colonel, C.B. ...	Graves, B. C. ...	S. C.
Lt.-Colonel ...	Gray, W. du G. ...	1st Punjab Infantry.
Lt.-Colonel ...	Greenfield, R. M. ...	2nd R. Innis. Fusiliers.
Captain ...	Greenhill-Gardyne, A. D.	2nd Gordon Highlanders.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lieutenant ...	Coldstream, W. M. ...	R. E.
Major ...	Cole, A. W. G. L. ...	1st R. Welsh Fusiliers.
Captain ...	Cole, E. H. ...	11th Bengal Lancers.
Lt.-Colonel ...	Cole, H. H. ...	Late R. E.
Major ...	Coleman, W. F. ...	2nd Suffolk Regiment.
The 'Hon'ble Major-General, K.C.I.E., C.B.	Collen, Sir, E. H. H.	Military Member of the Viceregal Council.
Lt.-Colonel ...	Collette, C. H. ...	1st Shropshire L. I.
Captain ...	Colomb, F. C. ...	42nd Gurkha Rifles.
Captain ...	Combe, L. ...	1st Scottish Rifles.
Captain ...	Comins, H. ...	1st Bengal Infantry.
Captain ...	Couner, R. ...	1st Gloucestershire Regt.
Lt.-Colonel ...	Cook, W. ...	30th Madras Infantry.
Maj.-General ...	Cooke, T. A. ...	Comdg. Sind District.
Captain ...	Cookson, G. A. ...	16th Bengal Cavalry.
Captain ...	Cooper, H. A. ...	1st Sikh Infantry.
Lieutenant ...	Corbyn, E. C. ...	18th Bengal Lancers.
Lt.-Col., D.S.O. ...	Couchman, G. H. H.	2nd Somersetshire L. I.
Lt.-Colonel ...	Courtenay, E. R. ...	11th Hussars.
Lieutenant ...	Cox, C. E. S. ..	1st Madras Lancers.
Captain ...	Cox, H. V. ...	21st Madras Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Cowper, M. ...	10th Bengal Lancers.
Colonel ...	Craigie, J. H. S. ...	Asst. Adjutant Genl.
Colonel, V.C. ...	Creagh, O'M. ...	Asst. Qr.-Mr. General.
Captain ...	Crookshank, C. deW. ...	R. E.
Lieutenant ...	Crosthwaite, J. G. ...	Asst. Commissioner.
Captain ...	Crowe, J. H. V. ...	R. A.
Major ...	Crowther, R. T. ...	23rd Pioneers.
Lieutenant ...	Cruddas, H. W. ...	38th Bengal Infantry.
Lieutenant ...	Cumberledge, C. J. ...	23rd Bombay Infantry.
Lieutenant ...	Cunningham, A. H. ...	R. E.
Captain ...	Cuppige, W. A. ...	5th Bengal Infantry.
Major, D.S.O. ...	Cure, H. C. ...	1st Gloucestershire Regt.
Lt.-Col., C.B. ...	Currie, T. ...	1st N. Staffordshire Regt.
Captain ...	Dallas, A. G. ...	16th Lancers.
Maj.-Genl., C.B. ...	Dalrymple, W. L. ...	
Captain, C.I.E. ...	Daly, H. ...	Dy. Secy. Foreign Dept.
Captain ...	Daunt, W. D. ...	C. I. Horse.
Lieutenant ...	Davidson, S. R. ...	S. C.
Captain ...	Davidson, W. L. ...	17th Bengal Infantry.
Major ...	Davies, A. M. ...	R. A. M. Corps.
Captain ...	Davies, H. R. ...	2nd Oxfordshire L. Infy.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Davis, C. ...	1st Bengal Lancers.
Major ...	Davison, K. S. ..	2nd Bengal Lancers.
Lieutenant ...	Davy, R. M. M. ...	1st Gloucestershire Regt
Major ...	Dawkins, H. S. ...	R. A.
Lieutenant ...	Dawson, E. ...	Moulmein Vol. Rifles.
Captain ...	Day, A. C. FitzR. ...	1st Dorsetshire Regt.
Lt.-Colonel ...	DeBrath, E. ...	Dy. Secy. to Govt., M. D.
Lieutenant ...	deLabilliere, E. G. D.	38th Bengal Infantry.
Captain, C.M.G., C.I.E.	DeLaessce, A. F. ...	Pol. Agent.
Captain, D.S.O...	DeLisle, H. DeB. ..	2nd Durham L. Infy.
Captain ...	Denne, A. R.	2nd Madras Infantry.
Colonel ...	Des Vœux, C. H. ...	36th Sikhs.
Captain ...	Dick, A. R. ...	2nd Punjab Cavalry.
Lt.-Colonel, v.c.	Dick-Cunyngham, W. H.	2nd Gordon Highlanders.
Lieutenant ...	Dickson, J. H. ...	Dy. A. C. Genl.
Captain ...	Dill, R. ...	2nd Yorkshire L. I.
Captain ...	Dillon, G. F. H. ...	Dy. A. A. Genl.
Captain ...	Dixon, P. E. ...	R. E.
Major ...	Dobbin, W. J. K. ...	1st Sikh Infantry.
Lieutenant ...	Donnan, W. ...	Asst. Mily. Accountant.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Colonel, D.S.O...	Dorward, A. R. F. ...	R. E.
H. E. Rear-Admiral	Douglas, A. C. ...	Naval C.-in-C. East Indies.
Captain ...	Douglas, J. A. ...	D. A. Q. M. Genl., I. B.
Captain ...	Dowding, H. H. H. ...	2nd Essex Regt.
Captain ...	Dowell, G. C. ...	R. A.
Captain ...	Drummond, E. J. ...	2-2nd Gurkha Rifles.
Major, C.I.E. ...	Drummond, F. H. R. ...	11th Bengal Lancers.
Colonel, C.I.E. ...	Duff, B. ...	Mily. Secy. to H. E. the C.-in-C. in India.
Captain ...	Duff, G. M. ...	R. E.
Major ..	du Moulin, L. E. ...	2nd Royal Sussex Regt.
Lt.-Colonel, M.D.	Duncan, A. ...	I. M. S.
Major, M.B. ...	Duncan, G. ...	I. M. S.
Captain ...	Duncan, S. ...	1st Gloucestershire Regt.
Major ...	Dunsterville, K. S. ...	R. A.
Lt.-Colonel ...	Duperier, H. W. ...	R. E.
K.C.S.I., K.C.I.E.	Durand, Sir H. M. ...	C. S.
Colonel ...	Duthy, A. E. ...	R. A.
Colonel, C.B. ...	Dyce, G. H. C. ...	Comdg. Tochi Force.
Major ...	Eardley-Wilmot, I. ...	18th Bengal Lancers.
Captain, D.S.O. ...	East, L. W. P. ...	R. A.
Lieutenant ...	Eccles, C. J. ...	16th Lancers.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Edwards, C. G. F. ...	5th Punjab Cavalry.
Captain, D.S.O. ...	Edwards, F. J. M. ...	D. A. A. General.
Major, D.S.O. ...	Edwards, J. B. ...	C. I. Horse.
Captain ...	Egerton, C. P. ...	S. C.
Br.-Genl., K.C.B.	Elles, Sir E. R. ...	Comdg. Peshawar Dist.
Major-General, C.B., D.S.O.	Elliot, E. L. ...	L. G., Cavalry in India.
Major-General, C.B.	Evans, H. M. ...	
Major ...	Evatt, J. T. ...	39th Bengal Infantry.
Captain ...	Everett, H. J. ...	1st Somersetshire L. I.
Lt.-Colonel ...	Exham, R. ...	R. A. M. C.
Captain ...	Fagan, H. R. ...	1st Punjab Infantry.
Lieutenant ...	Fagan, L. E. ...	S. C., 6th Madras Infy.
Major ...	Faithfull, H. T. ...	33rd Punjab Infantry.
Captain ...	Falcon, R. W. ...	4th Sikhs.
Captain ...	Fane, V. B. ...	1st Punjab Cavalry.
Esq., C.S.I., C.B.	Fanshawe, A. U. ...	Dir.-Genl. of the Post Office in India.
Esq., C.S. ...	Fanshawe, H. C. ...	Chief Secy. to the Pun- jab Govt.
Captain ...	Fasken, W. H. ...	10th Bengal Lancers.
Captain ...	Faulknor, A. A. M. M.	2nd Bombay Infantry.
Captain ...	Fayrer, J. O. S. ...	1-5th Gurkha Rifles.
Major ...	Fegen, M. F. ...	R. A.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Fell, R. B. ...	1st Scottish Rifles.
Major, D.S.O. ...	Fendall, C. P. ...	R. A.
Major ...	Fenton, A. B. ..	A. A. General.
Lieutenant ...	Fergusson, A. C. ...	R. A.
Captain ...	Fergusson, H. C. ...	2nd Bn. H. L. Infantry.
Major, D.S.O. ...	Ferrier, J. A. ...	R. E.
Captain ...	Finch, C. ...	1st Bengal Lancers.
Captain ...	Finch, E. H. F. ...	D. A. A. G. for Musketry
Major ...	Fink, G. H. ...	I. M. S.
Esq., C.S.I., C.S....	Finlay, J. F. ..	Secy. to Govt., Finance Department.
Major ...	Finnis, H. ...	R. E., D. A. A. G. for R.E.
Captain ...	Firth, E. W. A. ...	9th Madras Infantry.
Captain ...	Fisher, J. ...	1-2nd Gurkha Rifles.
Lt.-Colonel ...	Fitzgerald, C. M. ...	A. C. General.
Colonel ...	Fletcher, A. F. ...	R. A., I. G. of Ordnance.
Lieutenant ...	Foord, E. R. ...	S. C., Asst. Mily. Ac- countant.
Captain ...	Forbes, L. A. ...	S. C.
Captain ...	Ford, C. A. W. ...	4th Bombay Infantry.
Major ...	Forde, L. ...	R. A.
Captain ...	Forestier-Walker, C.E.	R. A.
Captain ...	Forth, C. T. W. ...	30th Punjab Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel	Foss, K. M.	26th Madras Infantry
Col., C.I.E., Q.H.P.	Franklin, B.	I. M. S.
Captain	Fraser, N. G.	4th Bombay Cavalry
Major	Fowler, R. W.	R. A.
Captain	Fyfe, B. O.	1st Gloucestershire Regt.
Captain	Galloway, F. L.	R. A.
Lt.-Colonel	Gallwey, E. J.	2nd Somerset L. Infy
Lt.-Colonel	Garbett, C. H. V.	2nd Bengal Lancers
Lieutenant	Gardner, R. M. S.	1st Gloucestershire Regt.
Lieutenant	Garratt, H. S.	3rd Bombay Infantry.
Lt.-Colonel	Gartside-Tipping, R. F.	1st Bengal Lancers
Brig.-Genl., K.C.B. A.D.C.	Gascoe, Sir A.	Offg. Q. M. G. in India
Lt.-Colonel	Gastrell, G. D. C.	8th Bengal Infantry.
Major-Genl., K.C.F., D.S.O.	Genere, Sir W. F.	Comd'g Eastern District
Lieutenant	Grisson, A. W. D.	2nd High Lt. Infantry.
Lt.-Colonel	Guths, M. L.	31st Punjab Infantry
Captain	Guths, A.	13th Bengal Infantry.
Captain	Gillingham, W. J. T.	1st Royal West Surrey Regt.
Lt.-Colonel	Glenah, E.	R. E.
Lt.-Colonel	Giles, H.	Det. Army Remount Department.
Captain	Gifford, S. H.	Asst. to the Resident at L. B.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lieutenant ...	Godwin, C. A. C. ...	3rd Punjab Cavalry.
Captain ...	Goodridge, W. S. ...	R. N., Director of Royal Indian Marine.
Lt.-Colonel ...	Gordon, H. K. ...	(Retired). Comdg. Hyderabad Vol. Rifles.
Lt.-Colonel, C.I.E.	Gordon, J. C. F. ...	6th Bengal Cavalry.
Lieutenant ...	Gordon, J. L. R. ...	15th Sikhs.
Captain ...	Gordon, Lincoln ...	Oudh Vol. Rifles.
Colonel ...	Gordon, R. ...	22nd Punjab Infantry.
Major ...	Gordon, S. D. ...	D. A. A. General.
Captain ..	Gordon, W. E. ...	1st Gordon Highlanders.
Major ...	Gore, St. J. C. ...	5th Dragoon Guards.
Major ...	Gosset, E. A. G. ...	2nd Derby : Regiment.
Captain ...	Gough, S. C. ...	5th Bengal Cavalry.
Captain, D.S.O.	Graham, H. W. G. ...	5th Lancers.
Colonel ...	Grant, H. G. ...	U. Active List.
Maj.-Genl., C.B.	Grant, H. F. ...	I. G. of Cavalry England.
Colonel ...	Grant, Jas. ...	S. C.
Lt.-Colonel ...	Grant, S. ...	R. E., Comdg. Madras S. & M.
Colonel, C.B. ...	Graves, B. C. ...	S. C.
Lt.-Colonel ...	Gray, W. du G. ...	1st Punjab Infantry.
Lt.-Colonel ...	Greenfield, R. M. ...	2nd R. Innis. Fusiliers.
Captain ...	Greenhill-Gardyne, A. D.	2nd Gordon Highlanders.

ORDINARY MEMBERS -continued.

Rank.	Name.	Corps, &c.
Captain ...	Grey, W. G. ...	3rd Madras Infantry.
Major, C.I.E. ...	Griesbach, C. L. ...	Dir., Geological Survey of India.
Lieutenant ...	Griffith, G. H. ...	R. E.
Lieutenant ...	Grimley, W. M. ...	S. C., Asst. Military Accountant.
Lieutenant ...	Grimshaw, E. W. ...	24th Madras Infantry.
Captain ...	Grimston, R. E. ...	6th Bengal Cavalry.
Captain ...	Grimston, S. B. ...	18th Bengal Lancers.
Lieutenant ...	Grove, H. M. ...	S. C.
Major ...	Grover, M. H. S. ...	Asst. Adj. Genl.
Lieutenant ...	Grover, P. C. ...	1st Shropshire L. I.
Captain ...	Guilding, E. L. ...	2nd Essex Regt.
Major ...	Guinness, E. ...	R. A.
Captain ...	Gunning, C. J. ...	1st Madras Pioneers.
Captain ...	Gwyn, A. ...	R. I. M., Dy. Director.
Colonel ...	Hailes, W. ...	S. C., Offg. Col. on the Staff, Mooltan.
Lieutenant ...	Hall, R. M. ...	13th Bengal Lancers.
Lieutenant ...	Hamer, M. A. ...	1st Shropshire L. I.
Captain ...	Hamilton, C. ...	2nd Bengal Infantry.
Colonel, C.B., D.S.O.	Hamilton, Ian S. M.	Comdt. Schl. of Mus., Hythe.
Major, D.S.O. ...	Hamilton, W. G. ...	2nd East L. Regt.
Col., V.C., C.B., D.S.O., A.-D.-C.	Hammond, A. G. ...	Commanding at Rawal Pindi.

ORDINARY MEMBERS—continued.

Corps, &c.	Rank.	Name.	Corps, &c.
Madras Infantry	Colonel, C.B. ...	Harley, G. E. ...	A. A. G., Belfast.
Medical Surgeon.	Lt.-Colonel ...	Harman, C. E. ...	2nd Connaught Rangers
	Captain ...	Harris, A. P. D. ...	11th Bengal Infantry.
Asst. Military Attendant.	Lt.-Colonel ...	Harris, C. W. ...	2nd Bengal Infantry.
Madras Infantry	Esquire ...	Hart, G. H. R. ...	Dy. Auditor-General.
Regimental Cavalry.	Lt.-Colonel ...	Hart, H. H. ...	R. E.
Regimental Lancers	Brig.-Genl., V.C., C.B.	Hart, R. C. ...	Commanding Belgaum District.
	Captain ...	Harvest, H. de V. ...	9th Madras Infantry.
Genl.	Surg.-Genl., C.B. D.S.O., M. D.	Harvey, R. ...	I. M. S.
Shire L.I.	Major ...	Haughton, T. H. ...	Asst. Adjt. General.
Regt.	Lt.-Colonel ...	Hawkes, H. M. P. ...	Commissary General for Transport.
	Captain ...	Hawkes, L. H. ...	2nd Welsh Regiment.
	Lieutenant ...	Hawkes, R. ...	1st Bengal Infantry.
s Pioneers	Lt.-Colonel ...	Hawkins, F. ...	1st Bengal Infantry.
Dy. Director.	Captain ...	Hayden, F. A. ...	West Riding Regiment.
Col. on the Moltan.	Major ...	Hayes, C. H. ...	1st Bengal Lancers.
al Lancers.	Captain ...	Head, G. ...	1st Norfolk Regiment.
Shire L.I.	Captain ...	Heaven, F. G. ...	Shillong Vol. Rifles.
Infantry.	Lieutenant ...	Heffernan, H. W. ...	19th Madras Infantry.
chl. of Mus.	Major ...	Hegan, E. ...	5th Dragoon Guards.
Regt.	Captain, D.S.O.	Henegan, J. ...	10th Madras Infantry.
g at Rawal			

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps &c.
Lieutenant ...	Coldstream, W. M. ...	R. E.
Major ...	Cole, A. W. G. L. ...	1st R. Welsh Fusiliers.
Captain ...	Cole, E. H. ...	11th Bengal Lancers.
Lt.-Colonel ...	Cole, H. H. ...	Late R. E.
Major ...	Coleman, W. F. ...	2nd Suffolk Regiment.
The Hon'ble Major-General, K.C.I.E., C.B.	Collen, Sir, E. H. H.	Military Member of the Viceroyal Council.
Lt.-Colonel ...	Collette, C. H. ...	1st Shropshire L. I.
Captain ...	Colomb, F. C. ...	42nd Gurkha Rifles.
Captain ...	Combe, L. ...	1st Scottish Rifles.
Captain ...	Cowins, H. ...	1st Bengal Infantry.
Captain ...	Conner, R. ...	1st Gloucestershire Rgt.
Lt.-Colonel ...	Cook, W. ...	3rd Madras Infantry.
Maj.-General ...	Cooke, T. A. ...	Comdg. Sund District.
Captain ...	Cookson, G. A. ...	16th Bengal Cavalry.
Captain ...	Cooper, H. A. ...	1st Sikh Infantry.
Lieutenant ...	Corbyn, E. C. ...	18th Bengal Lancers.
Lt. Col., D.S.O. ...	Couchman, G. H. H.	2nd Somersetshire L. I.
Lt. Colonel ...	Courtenay, E. R. ...	11th Hussars.
Lieutenant ...	Cox, C. E. S. ...	1st Madras Lancers.
Captain ...	Cox, H. V. ...	21st Madras Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Cowper, M. ...	10th Bengal Lancers.
Colonel ...	Craigie, J. H. S. ...	Asst. Adjutant Genl.
Colonel, v.c. ...	Creagh, O'M. ...	Asst. Qr.-Mr. General.
Captain ...	Crookshank, C. deW. ...	R. E.
Lieutenant ...	Crosthwaite, J. G. ...	Asst. Commissioner.
Captain ...	Crowe, J. H. V. ...	R. A.
Major ...	Crowther, R. T. ...	23rd Pioneers.
Lieutenant ...	Cruddas, H. W. ...	38th Bengal Infantry.
Lieutenant ...	Cumberledge, C. J. ...	23rd Bombay Infantry.
Lieutenant ...	Cunningham, A. H. ...	R. E.
Captain ...	Cuppage, W. A. ...	5th Bengal Infantry.
Major, D.S.O. ...	Cure, H. C. ...	1st Gloucestershire Regt.
Lt.-Col., C.B. ...	Currie, T. ...	1st N. Staffordshire Regt.
Captain ...	Dallas, A. G. ...	16th Lancers.
Maj.-Genl., C.B. ...	Dalrymple, W. L. ...	
Captain, C.I.E. ...	Daly, H. ...	Dy. Secy. Foreign Dept.
Captain ...	Daunt, W. D. ...	C. I. Horse.
Lieutenant ...	Davidson, S. R. ...	S. C.
Captain ...	Davidson, W. L. ...	17th Bengal Infantry.
Major ...	Davies, A. M. ...	R. A. M. Corps.
Captain ...	Davies, H. R. ...	2nd Oxfordshire L. Infy.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain	Davis, C.	1st Bengal Lancers.
Major	Davison, K. S.	2nd Bengal Lancers.
Lieutenant	Davy, R. M. M.	1st Gloucestershire Regt.
Major	Dawkins, H. S.	R. A.
Lieutenant	Dawson, E.	Moulmein Vol. Rifles.
Captain	Day, A. C. FitzR.	1st Dorsetshire Regt.
Lt Colonel	DeBrath, E.	Dy. Secy. to Govt, M. D.
Lieutenant	deLabilliere, E. G. D.	38th Bengal Infantry.
Captain C.M.G., C.P.	DeLasson, A. F.	Pol. Agent.
Captain D.S.O.	DeLisle, H. DeB.	2nd Durham L. Infy.
Captain	Denne, A. R.	2nd Malhas Infantry.
Captain	Des Vaux, C. H.	56th Sikhs.
Captain	Dick, A. R.	2nd Punjab Cavalry.
Lt Colonel &c.	Dick Cunningham, W. H.	2nd Gordon High Land- ers.
Lieutenant	Dickson, J. H.	Dy. A. C. Genl.
Captain	Dick, R.	2nd Yorkshire L. I.
Captain	Dillon, G. F. H.	Dy. A. A. Genl.
Captain	Dixon, P. E.	R. E.
Major	Dillon, W. J. K.	1st Sikh Infantry.
Lieutenant	Dixon, W.	Asst. Mag. Assistant.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Colonel, D.S.O...	Dorward, A. R. F. ...	R. E.
H. E. Rear-Admiral	Douglas, A. C. ...	Naval C.-in-C. East Indies.
Captain ...	Douglas, J. A. ...	D. A. Q. M. Genl., I. B.
Captain ...	Dowding, H. H. H. ...	2nd Essex Regt.
Captain ...	Dowell, G. C. ...	R. A.
Captain ...	Drummond, E. J. ...	2-2nd Gurkha Rifles.
Major, C.I.E. ...	Drummond, F. H. R. ...	11th Bengal Lancers.
Colonel, C.I.E. ...	Duff, B. ...	Mily. Secy. to H. E. the C.-in-C. in India.
Captain ...	Duff, G. M. ...	R. E.
Major ..	du Moulin, L. E. ...	2nd Royal Sussex Regt.
Lt.-Colonel, M.D.	Duncan, A. ...	I. M. S.
Major, M.B. ...	Duncan, G. ...	I. M. S.
Captain ...	Duncan, S. ...	1st Gloucestershire Regt.
Major ...	Dunsterville, K. S. ...	R. A.
Lt.-Colonel ...	Duperier, H. W. ...	R. E.
K.C.S.f., K.C.I.E.	Durand, Sir H. M. ...	C. S.
Colonel ...	Duthy, A. E. ...	R. A.
Colonel, C.B. ...	Dyce, G. H. C. ...	Comdg. Tochi Force.
Major ...	Eardley-Wilmot, I. ...	18th Bengal Lancers.
Captain, D.S.O. ...	East, L. W. P. ...	R. A.
Lieutenant ...	Eccles, C. J. ...	16th Lancers.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Edwards, C. G. F. ...	5th Punjab Cavalry.
Captain, D.S.O. ...	Edwards, F. J. M. ...	D. A. A. General.
Major, D.S.O. ...	Edwards, J. B. ...	C. I. Horse.
Captain ...	Egerton, C. P. ...	S. C.
Br.-Genl., K.C.B.	Elles, Sir E. R. ...	Comdg. Peshawar Dist.
Major-General, C.B., D.S.O.	Elliot, E. L. ...	I. G., Cavalry in India.
Major-General, C.B.	Evans, H. M. ...	
Major ...	Evatt, J. T. ...	39th Bengal Infantry.
Captain ...	Everett, H. J. ...	1st Somersetshire L. I.
Lt.-Colonel ...	Exham, R. ...	R. A. M. C.
Captain ...	Fagan, H. R. ...	1st Punjab Infantry.
Lieutenant ...	Fagan, L. E. ...	S. C., 6th Madras Infy.
Major ...	Faithfull, H. T. ...	33rd Punjab Infantry.
Captain ...	Falcon, R. W. ...	4th Sikhs.
Captain ...	Fane, V. B. ...	1st Punjab Cavalry.
Esq., C.S.I., C.S.	Fanshawe, A. U. ...	Dir.-Genl. of the Post Office in India.
Esq., C.S. ...	Fanshawe, H. C. ...	Chief Secy. to the Pun- jab Govt.
Captain ...	Fasken, W. H. ...	10th Bengal Lancers.
Captain ...	Faulknor, A. A. M. M.	2nd Bombay Infantry.
Captain ...	Fayrer, J. O. S. ...	1-5th Gurkha Rifles.
Major ...	Fegen, M. F. ...	R. A.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Fell, R. B. ...	1st Scottish Rifles.
Major, D.S.O. ...	Fendall, C. P. ...	R. A.
Major ...	Fenton, A. B. ..	A. A. General.
Lieutenant ...	Fergusson, A. C. ...	R. A.
Captain ...	Fergusson, H. C. ...	2nd Bn. H. L. Infantry.
Major, D.S.O. ...	Ferrier, J. A. ...	R. E.
Captain ...	Finch, C. ...	1st Bengal Lancers.
Captain ...	Finch, E. H. F. ...	D. A. A. G. for Musketry
Major ...	Fink, G. H. ...	I. M. S.
Esq., C.S.I., C.S....	Finlay, J. F. ..	Secy. to Govt., Finance Department.
Major ...	Finnis, H. ...	R. E., D. A. A. G. for R.E.
Captain ...	Firth, E. W. A. ...	9th Madras Infantry.
Captain ...	Fisher, J. ...	1-2nd Gurkha Rifles.
Lt.-Colonel ...	Fitzgerald, C. M. ...	A. C. General.
Colonel ...	Fletcher, A. F. ...	R. A., I. G. of Ordnance.
Lieutenant ...	Foord, E. R. ...	S. C., Asst. Mily. Ac- countant.
Captain ...	Forbes, L. A. ...	S. C.
Captain ...	Ford, C. A. W. ...	4th Bombay Infantry.
Major ...	Forde, L. ...	R. A.
Captain ...	Forestier-Walker, C.E.	R. A.
Captain ...	Forth, C. T. W. ...	30th Punjab Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel ...	Foss, K. M. ...	26th Madras Infantry.
Col., C.I.E., Q.H.P.	Franklin, B. ...	I. M. S.
Captain ...	Fraser, N. G. ...	4th Bombay Cavalry.
Major ...	Fuller, R. W. ...	R. A.
Captain ...	Fyffe, B. O. ...	1st Gloucestershire Regt.
Captain ...	Galloway, F. L. ...	R. A.
Lt.-Colonel ...	Gallwey, E. J. ...	2nd Somerset L. Infy.
Lt.-Colonel ...	Garbett, C. H. V. ...	2nd Bengal Lancers.
Lieutenant ...	Gardner, R. M. S. ...	1st Gloucestershire Regt.
Lieutenant ...	Garratt, H. S. ..	3rd Bombay Infantry.
Lt.-Colonel ...	Gartside-Tipping, R.F.	1st Bengal Lancers.
Brig.-Genl., K.C.B. A.-D.-C.	Gaselee, Sir A. ...	Offg. Q. M. G. in India.
Lt.-Colonel ...	Gastrell, G. D. C. ...	8th Bengal Infantry.
Major-Genl., K.C.B., D.S.O.	Gatacre, Sir W. F. ...	Comdg. Eastern District.
Lieutenant ...	Gaussen, A. W. D. ...	2nd High. Lt. Infantry.
Lt.-Colonel ...	Gibbs, M. I. ...	31st Punjab Infantry.
Captain ...	Giles, A. ...	13th Bengal Infantry.
Captain ...	Glasgow, W. J. T. ...	1st Royal West Surrey Regt.
Lt.-Colonel ...	Glennie, E. ...	R. E.
Lt.-Colonel ...	Goad, H. ...	Dir. Army Remount Department.
Captain ...	Godfrey, S. H. ...	Asst. to the Resident for Leh.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lieutenant ...	Godwin, C. A. C. ...	3rd Punjab Cavalry.
Captain ...	Goodridge, W. S. ...	R. N., Director of Royal Indian Marine.
Lt.-Colonel ...	Gordon, H. K. ...	(Retired). Comdg. Hyderabad Vcl. Rifles.
Lt.-Colonel, C.I.E.	Gordon, J. C. F. ...	6th Bengal Cavalry.
Lieutenant ...	Gordon, J. L. R. ...	15th Sikhs.
Captain ...	Gordon, Lincoln ...	Oudh Vol. Rifles.
Colonel ...	Gordon, R. ...	22nd Punjab Infantry.
Major ...	Gordon, S. D. ...	D. A. A. General.
Captain ..	Gordon, W. E. ...	1st Gordon Highlanders.
Major ...	Gore, St. J. C. ...	5th Dragoon Guards.
Major ...	Gosset, E. A. G. ...	2nd Derby : Regiment.
Captain ...	Gough, S. C. ...	5th Bengal Cavalry.
Captain, D.S.O.	Graham, H. W. G. ...	5th Lancers.
Colonel ...	Grant, H. G. ...	U. Active List.
Maj.-Genl., C.B.	Grant, H. F. ...	I. G. of Cavalry England.
Colonel ...	Grant, Jas. ...	S. C.
Lt.-Colonel ...	Grant, S. ...	R. E., Comdg. Madras S. & M.
Colonel, C.B. ...	Graves, B. C. ...	S. C.
Lt.-Colonel ...	Gray, W. du G. ...	1st Punjab Infantry.
Lt.-Colonel ...	Greenfield, R. M. ...	2nd R. Innis. Fusiliers.
Captain ...	Greenhill-Gardyne, A. D.	2nd Gordon Highlanders.

ORDINARY MEMBERS -continued.

Rank.	Name.	Corps, &c.
Captain ...	Grey, W. G. ...	3rd Madras Infantry.
Major, C.I.E. ...	Griesbach, C. L. ...	Dir., Geological Survey of India.
Lieutenant ...	Griffith, G. H. ...	R. E.
Lieutenant ...	Grimley, W. M. ...	S. C., Asst. Military Accountant.
Lieutenant ...	Grimshaw, E. W. ...	24th Madras Infantry.
Captain ...	Grimston, R. E. ...	6th Bengal Cavalry.
Captain ...	Grimston, S. B. ...	18th Bengal Lancers.
Lieutenant ...	Grove, H. M. ...	S. C.
Major ...	Grover, M. H. S. ...	Asst. Adj. Genl.
Lieutenant ...	Grover, P. C. ...	1st Shropshire L. I.
Captain ...	Guilding, E. L. ...	2nd Essex Regt.
Major ...	Guinness, E. ...	R. A.
Captain ...	Gunning, C. J. ...	1st Madras Pioneers.
Captain ...	Gwyn, A. ...	R. I. M., Dy. Director.
Colonel ...	Hailes, W. ...	S. C., Offg. Col. on the Staff, Mooltan.
Lieutenant ...	Hall, R. M. ...	13th Bengal Lancers.
Lieutenant ...	Hamer, M. A. ...	1st Shropshire L. I.
Captain ...	Hamilton, C. ...	2nd Bengal Infantry.
Colonel, C.B., D.S.O.	Hamilton, Ian S. M.	Comdt. Schl. of Mus., Hythe.
Major, D.S.O. ...	Hamilton, W. G. ...	2nd East L. Regt.
Col., V.C., C.B., D.S.O., A.-D.-C.	Hammond, A. G. ...	Commanding at Rawal Pindi.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Colonel, C.B. ...	Harley, G. E. ...	A. A. G., Belfast.
Lt.-Colonel ...	Harman, C. E. ...	2nd Connaught Rangers
Captain ...	Harris, A. P. D. ...	11th Bengal Infantry.
Lt.-Colonel ...	Harris, C. W. ...	2nd Bengal Infantry.
Esquire ...	Hart, G. H. R. ...	Dy. Auditor-General.
Lt.-Colonel ...	Hart, H. H. ...	R. E.
Brig.-Genl., v.c., C.B.	Hart, R. C. ...	Commanding Belgaum District.
Captain ...	Harvest, H. de V. ...	9th Madras Infantry.
Surg.-Genl., C.B. D.S.O., M. D.	Harvey, R. ...	I. M. S.
Major ...	Haughton, T. H. ...	Asst. Adjt. General.
Lt.-Colonel ...	Hawkes, H. M. P. ...	Commissary General for Transport.
Captain ...	Hawkes, L. H. ...	2nd Welsh Regiment.
Lieutenant ...	Hawkes, R. ...	1st Bengal Infantry.
Lt.-Colonel ...	Hawkins, F. ...	1st Bengal Infantry.
Captain ...	Hayden, F. A. ...	West Riding Regiment.
Major ...	Hayes, C. H. ...	1st Bengal Lancers.
Captain ...	Head, G. ...	1st Norfolk Regiment.
Captain ...	Heaven, F. G. ...	Shillong Vol. Rifles.
Lieutenant ...	Heffernan, H. W. ...	19th Madras Infantry.
Major ...	Hegan, E. ...	5th Dragoon Guards.
Captain, D.S.O.	Henegan, J. ...	10th Madras Infantry.

ORDINARY MEMBERS—continued.

Rank.		Name.		Corps, &c.
Major	...	Hendley, H.	...	I. M. S.
Lt.-Colonel	...	Henriques, E. N.	...	R. A.
Colonel	...	Henry, G.	...	R. E., Offg. D. A. Genl.
Major	...	Herbert, C.	...	Political Agent.
Lt.-Colonel	...	Herbert, L.	...	C. I. Horse.
Lt.-Colonel	...	Hervey, H. de la M.		I. S. C.
Lieutenant	...	Hickie, C. J.	...	1st Gloucestershire Regiment.
Colonel, C.B.	...	Hill, W.	...	A A G. for Musketry.
Lieutenant	...	Hill, W. L. B.	..	1st Gloucestershire Regiment.
Colonel	...	Hilliard, W. E.	...	Asst. Qr. Master Genl.
Lieutenant	...	Hislop, A. F.	...	5th Bombay Cavalry.
Maj.-Genl., C.B.		Hobday, T. F.	...	Commissary General-in-Chief.
Esquire	...	Hodson, C. W.	...	Dy. Secy., P W. D.
Captain	...	Hodson, G. B.	...	Guides Infantry.
Maj.-Genl., C.B.		Hogg, G. C.	...	Comdg. Deesa Dist.
Lt.-Colonel	...	Hogge, C.	...	33rd Bengal Infantry.
Lt.-Colonel, C.I.E		Hogge, J. W.	...	14th Sikhs.
Captain	...	Hoghton, F. A.	...	1st Bombay Infantry.
Captain	...	Holland, P.	...	5th Punjab Infantry.
Captain	...	Holland-Pryor, P.	...	13th Bengal Lancers.
Major	...	Holloway, E. L.	...	4th Madras Pioneers.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps &c.
Lieutenant ...	Holman, H. C. ...	16th Bengal Cavalry.
Captain ...	Home, J. M. ...	2-2nd Gurkha Rifles.
Captain ...	Horsbrugh, R. P. ...	Asst. Commissioner.
Captain ...	Houison-Craufurd, J. A.	7th Bombay Infantry.
Captain ...	Howell, L. J. ...	16th Bengal Cavalry.
Lieutenant ...	Howell, P. ...	17th Bengal Infantry.
Colonel ...	Howlett, A. ...	12th Madras Infantry.
Lieutenant ...	Hudson, A. K. ...	17th Bengal Cavalry.
Captain ...	Hudson, T. R. C. ...	R. A.
Lieutenant ...	Hughes, C. C. A. A....	14th Bengal Lancers.
Captain ...	Hughes, F. T. C. ...	Erinpura Irregular Force.
Lt.-Col., D.S.O.	Huggins, P. G. ...	21st Madras Infantry.
Captain ...	Hume, C. V. .	R. A.
Major ...	Humphery, S. ...	1st Gloucestershire Regiment.
Major ...	Hutchins, H. L. ...	A. C. General.
Lieutenant ...	Hutchinson, C. A. R.	3rd Sikh Infantry.
Colonel ..	Hutchinson, H. D. ...	Dir. of Mily. Education in India.
Captain ...	Ievers, O. G. ...	S. C.
Captain ...	Iggulden, H. A. ...	2nd Derby. Regt.
Lt.-Colonel ...	Iremonger, R. G. ...	33rd Madras Infantry..
Major ...	Jackson, J. ..	9th Madras Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Crops, &c.
Captain ...	Jacob, C. W. ...	24th Bombay Infantry.
Captain ...	Jacob, H. F. ...	Asst. Pol. Resident.
Lt.-Colonel ...	James, L. H. S. ...	Late R. A.
Captain ...	James, W. B. ...	2nd Bengal Lancers.
Br.-Genl., C.B....	Jeffreys, P. D. ...	Comdg. Narbada Dist.
Major ...	Jellett, J. H. ...	R. A.
Maj.-Genl., C.B.	Jennings, R. M. ...	Comdg. Oudh District.
Captain ...	Jermyn, T. ...	D. A. A. General.
Lieutenant ...	Jerram, H. ...	Mily. Education Dept.
Colonel ...	Jerrard, F. B. J. ...	Asst. Adj. General.
Major ...	Johnson, F. E. ...	R. A.
Captain ...	Johnstone, A. A. J. ...	D. A. Q. M. G., I. B.
Captain ...	Johnstone, B. A. ...	D. A. A. General for Musketry.
Lt.-Colonel ...	Jones, A. E. ...	32nd Pioneers.
Captain, D.S.O...	Jones, H. J. ...	14th Bengal Infantry.
Lieutenant ...	Jordan, R. P. ...	1st Gloucestershire Regt.
Major ...	Justice, C. Le G. ...	13th Bengal Infantry.
Lt.-Col., D.S.O...	Keary, H. D'U. ...	31st Madras Infantry.
Major ...	Keate, C. R. ...	31st Madras Infantry.
Lieutenant ...	Keddie, H. W. G. ...	R. A.
Major, D.S.O. ...	Keene, A. ...	R. A.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Col., C.B., D.S.O.	Keighley, C. M. ...	Asst. Commy. Genl.
Lieutenant ...	Keily, E. W. ...	25th Madras Infantry.
Major ...	Keir, J. L. ...	R. A.
Colonel, C.B., A.-D.-C.	Kelly, J. G. ...	S. C., Comdg. Malakand Bde.
Major ...	Kemball, G. V. ...	R. A., D. A. Q. M. G., I. B.
Vety.-Maj. ...	Kemp, W. H. ...	Retired List.
Lieutenant ...	Kennedy, W. M. ...	Asst. Commr.
Captain ...	Kennion, R. L. ...	S. C., Political Asstt.
Captain ...	Kenny, H. T. ...	2nd Bombay Lancers.
Lt.-Colonel ...	Kekewich, R. G. ...	1st North Lancashire Regiment.
Lieutenant ...	Kenrick, G. E. R. ...	1st Royal W. Surrey Regt.
Captain ...	King, A. B.	2nd Royal Irish Regt.
Esquire ...	Kirk, H. A. ...	Dir. of Telegraphs.
Captain ...	Kirkpatrick, W. ...	1st Punjab Infantry.
Colonel ...	Kitchener, F. W. ...	West Yorkshire Regt.
Captain ...	Knight, W. C. ...	4th Bengal Cavalry.
Lieutenant ...	Knox, A. W. F. ...	19th Madras Infantry.
Lieutenant ..	Knox, C. S. ...	1st Gloucestershire Regt.
Major ...	Kreyer, F. A. C. ...	16th Bombay Infantry.
Captain ...	Laing, F. C. ...	12th Bengal Infantry.
Lieutenant ...	Lambert, W. J. ...	2nd Lancers, H. C.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lieutenant ...	Lance, F. F. H. ...	19th Bengal Lancers.
Lieutenant ...	Lash, A. O. ...	13th Bombay Infantry.
Captain ...	Lathbury, H. O. ...	R. E.
Colonel, C.B., D.S.O.	Leach, H. P. ...	R. E.
Colonel ...	Leckie, F. W. V. ...	S. C.
Lieutenant ...	Legge, W. K. ...	2nd Essex Regiment.
Col. BART, C.B.	Leslie, Sir C. H. ...	2-4th Gurkhas.
Major ..	Ley, W. G. ...	1st N. Staffordshire Regt.
Lieutenant ...	Lightfoot, T. W. ...	8th Bengal Infantry.
Major ...	Lindesay, E. ...	2nd Royal Irish Regt.
Captain ...	Little, C. B. ...	1st Somersetshire L. Infantry.
Lieutenant ...	Lloyd, W. E. E.	4th Infantry, H. C.
H. E. General, G.C.B., K.C.S.I.	Lockhart, Sir W. S. A.	Commander-in-Chief in India.
Captain ...	Loudon, J. A. ...	13th Madras Infantry.
Maj.-Genl., C.B., C.S.I.	Lovett, B. ...	R. E.
Lt.-Genl., G.C.B.	Low, Sir R. C. ...	Comdg. the Forces Bombay.
Captain, M.B. ...	Luard, H. B. ...	I. M. S.
Lieutenant ...	Lubbock, G. ...	R. E.
Major, D.S.O. ...	Lucas, F. G. ...	2-5th Gurkha Rifles.
Captain ...	Luck, C. A. ...	2nd Punjab Cavalry.
Lt.-Genl., K.C.B.	Luck, Sir G. ...	Comdg. the Forces Bengal.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel ...	Lugard, H. T. ...	R. A.
Major ...	Lumsden, H. R. W. ...	3rd Bengal Infantry.
Lieutenant ..	Lyne, C. V. N. ...	16th Madras Infantry.
Lieutenant ...	Lyon, J. W. H. ...	25th Madras Infantry.
Major ...	Lyster, A. W. ...	Retired.
Lieutenant ...	Macalpine-Leny, R. L.	16th Lancers.
Lieutenant ...	Macaulay, D. I. M. ...	4th Bengal Cavalry.
Major ...	Macdonald, J. R. L....	R. E.
Col., C.B., D.S.O....	MacGregor, C. R. ...	42nd Gurkha Rifles.
Lieutenant ...	Maclachlan, T. R. ...	40th Pathans.
Lieutenant ...	Macleane, A. H. ...	2nd Argyll and Sutherland Highlanders.
Major ...	Mackenzie, C. J. ...	2nd Seaforth Highs.
Major ...	Mackenzie, K. R. ...	2nd Seaforth Highs.
Captain ...	Mackenzie, R. J. H. L.	R. E., Liverpool.
Major ...	Mackenzie-Kennedy, E. C. W.	1st Madras Pioneers.
Lieut., D.S.O. ...	MacMunn, G. F. ...	R. A.
Lieutenant ...	Madden, T. E. ...	17th Bengal Infantry.
Lt.-Colonel ...	Maisey, F. C. ...	30th Punjab Infantry.
Major ...	Mahon, R. H. ...	R. A., Ordnance Dept.
Major-General, C.B.	Maitland, P. J. ...	Secy. to Govt., M. D.
Lieutenant ...	Major, F. F. ...	1st Infantry, H. C.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Malcolm, P. ...	2-4th Gurkha Rifles.
Lieutenant ...	Mansel, H. A. ...	1st Dorsetshire Regt.
Lt.-Colonel ...	Mansfield, H. ...	Asst. Commy. Genl.
Captain ...	Mardall, W. S. ...	17th Bengal Cavalry.
Captain ...	Marriott, E. F. ...	S. C.
Lieutenant ...	Marindin, A. H. ...	1st Royal Highlanders.
Major-General	Marsh, F. H. B. ...	U. Sup. List.
Major-General, C.I.E.	Marshall, G. F. L. ...	R. E., U. Sup. List.
Lt.-Colonel ...	Martin, A. R. ...	Offg. D. A. G. in India.
Lt.-Colonel ...	Martin, M. ...	R. E.
Lieutenant ...	Massie, R. H. ...	R. A., 5th Bo. Mtn. Batty
Lt.-Colonel, v.D., C.I.E.	Masson, D. P. ...	1st P. V. Rifles.
Captain ...	Massy, G. ...	1st Norfolk Regiment.
Major ...	Massy, H. S. ...	19th Bengal Lancers.
Lt.-Colonel ...	Masters, A. ...	2nd C. I. Horse.
Lieutenant ...	Maurice, F. B. ...	Derbyshire Regt.
Lieutenant ...	Maxwell, D. W. ...	2nd High. L. Infantry.
Major ...	Maxwell, G. W. ...	A. A. General.
Captain ...	Maxwell, H. G. ...	16th Ben. Cavalry.
Major ...	Maxwell, R. C. ...	R. E., D. A. A. General.
Major ...	Mayhew, H. S. ...	D. A. A. G. for Musky.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	Mayne, C. B. ...	R. E.
Lt.-Colonel, C.B.	Mayne, R. C. G. ...	30th Bombay Infantry.
Captain ...	McConaghey, H. ...	7th Bengal Cavalry.
Captain ...	McDermott, J. ...	2nd P. V. R. C.
Major ...	McIntyre, H. D. ...	8th Madras Infantry.
Lieutenant ...	McNeile, D. H. ...	19th Bengal Lancers.
Captain ...	McPherson, J. ...	Ordnance Department.
Lt.-Col., D.S.O.	McSwiney, E. F. H....	1st Lancers, H. C., Staff Capt. War Office.
Lt.-Colonel ...	Meade, J. W. B. ...	3rd Lancers, H. C.
Lt.-Colonel ...	Meade, M. J. ...	Political Agent.
Lieutenant ...	Mears, A. ...	S. C., Q. M. I.
Captain ...	Medley, A. G. ...	19th Bengal Lancers.
Major ...	Medley, E. J. ...	17th Bengal Cavalry.
Br.-Genl., K.C.B., C.M.G.	Meiklejohn, Sir W. H.	S. C., Comdg. Rohil- khand District.
Colonel, K.C.S.I.	Melliss, Sir H. ...	I. G. Imp. Service Troops.
Major, M.B. ...	Melville, C. H. ...	R. A. M. C.
Major ...	Melville, J. S. ...	4th Bengal Infantry.
Captain ...	Mercer, W. H. W. ...	26th Madras Infantry.
Esquire ...	Meredith, A. ...	C. S., Deputy Commr.
Br.-General ...	Michell, St. John F...	Offg., Comdt. Assam District.
Captain ...	Miles, P. J. ...	4th Punjab Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Colonel, C.S.I. ...	Miley, J. A. ...	Acct. Genl., M. D.
Captain ..	Millar, W. H. ...	27th Punjab Infantry.
Major, D.S.O. ...	Miller-Wallnutt, C. C.	2nd Gordon Highlanders.
Captain, D.S.O.	Moberly, F. J. ...	37th Bengal Infantry.
Lt.-Colonel ...	Monck-Mason, G. G.	R. A.
Br.-General, C.B.	Money, E. A. ...	Comdg. Bundelkhand District.
Lt.-Colonel ...	Money, G. A. ...	18th Bengal Lancers.
Lt.-Colonel ...	Money, G. E. ...	C. I. Horse.
Major ...	Montgomery, C. A. S.	1st Bombay Grenadiers.
Lt.-Colonel ...	Montgomery, J. A. L.	Sett. Commissioner.
Major ...	Moore, G. H. J. ...	Marwara Battalion.
Colonel ...	More-Molyneux, G. H.	S. C., Comdg. at Cawnpore.
Lieutenant ...	Morris, R. L. ...	3rd Bengal Cavalry.
Major ...	Morris, W. A. ...	R. A. M. C.
Lt.-Colonel ...	Morrison, R. H. ...	Late 18th Hussars.
Captain ...	Morton, E. R. ...	31st Punjab Infantry.
Maj.-General, K.C.I.E., C.B.	Morton, Sir G. de C.	Comdg. Lahore Dist.
Captain ...	Moulton-Barrett, H. P.	2nd A. & S. Highs.
Major ...	Mullaly, H. ...	R. E., D. A. Q. M. Genl., Mohn.
Captain ...	Mullins, W. B. ...	27th Punjab Infantry.
Captain ...	Murray, G. ...	3rd Punjab Cavalry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel ...	Murray, J. W. ...	R. A., A. Q. M. G., I. B.
Lt.-Colonel, M.B.	Murray, R. D. ...	I. M. S.
Lt.-Genl., K.C.B.	Nairne, Sir, C. E. ...	R. A.
Lieutenant ...	Nairne, E. S. ...	R. H. A.
Lieutenant ...	Nangle, K. E. ..	3rd Infy. Hyd. Cont.
Captain the Hon'ble.	Napier, H. D. ...	C. I. Horse.
Captain ...	Napier, G. S. F. ...	Staff Captain, I. B.
Major ...	Nedham, E. M. ...	S. C., Cant. Magistrate.
Captain ...	Neilson, W. ...	2nd High. L. Infy.
Lt.-Colonel, M.B.	Nelis, J. A. ...	I. M. S.
Lieutenant ...	Nethersole, A. R. ...	27th Madras Infantry.
Lieutenant ...	Nethersole, F. R. ...	17th Bengal Infantry.
Colonel ...	Neville, J. P. C. ...	A. Q. M. G.
Major ...	Newell, W. J. ...	8th Bengal Infantry.
Lt.-Colonel ...	Newill, J. H. ...	S. C., Pol. Resident.
General ...	Nicholl, T. ...	Late R. A.
Captain ...	Nicholls, A. ...	2nd Punjab Infantry.
Maj.-General, K.C.B.	Nicholson, Sir W. G.	Adj. Genl. in India.
Maj.-Genl., C.B.	Nicolson, M. H. ...	Comdg. Mhow Dist.
Lieutenant ...	Nisbet, F. C. ...	1st Gloucestershire Regt.
Lt.-Colonel ...	Nixon, J. E. ...	18th Bengal Lancers.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	Norie, C. E. de M. ...	1-2nd Gurkha Rifles.
Lieutenant ...	Norman, H. H. ...	1st Northamptonshire Regt.
Captain ...	Norman, W. W. ...	2nd Punjab Cavalry.
Lieutenant ...	O'Connor, W. F. T. ...	R. A.
Major ...	O'Donnell, G. B. ...	S. C., Asst. Pol. Agent.
Major ...	O'Donoghue, M. E. ...	15th Madras Infantry.
Esquire ...	O'Dwyer, M. F. ...	C. S.
Major ...	O'Leary, T. E. ...	1st Royal Irish Fus.
Major ...	O'Neill, W. H. ...	R. A.
Lt.-Colonel ...	O'Sullivan, G. H. W.	R. E., Asst. A. Genl.
Captain ...	Ogg, G. S. ...	R. A.
Captain ...	Oldfield, C. G. ...	R. A., Ordnance Dept.
Lieutenant ...	Oldfield, T. A. F. R.	S. C.
Major ...	Ommanney, G. S. ...	1-1st Gurkha Rifles.
Major ...	Ormerod, G. S. ...	2nd Royal Muns. Fus.
Colonel, C.I.E. ...	Ottley, J. W. ...	R. E.
Major ...	Ovens, G. H. ...	2nd Border Regt.
Major ...	Owen, R. ...	21st Hussars.
Colonel ...	Paley, E. G. ...	Late 18th Hussars.
Lt.-Genl., K.C.B.	Palmer, Sir A. P. ...	Comdg. the Forces, Punjab.
Captain ...	Palmer, H. I. E. ...	"Q.O" Corps of Guides.

ORDINARY MEMBERS continued.

Rank.	Name.	Corps, &c.
Captain ...	Parker, N. T. ...	6th Bengal Infantry.
Captain ...	Parsons, C. G. ...	S. C., Comr of Excise.
Esquire, C.I.E...	Patterson, A. B. ...	C. S.
Lt.-Colonel ...	Patterson, G. ...	Wyde Bay Mounted Infantry, Queensland Defence Forces.
Captain ...	Patterson, H. McN ...	5th Bengal Cavalry.
Major ...	Paul, E. T. ...	D. A. A. General.
Major, D.S.O. ...	Payne, R. L. ...	1st Somerset, L. Infy.
Captain ...	Peach, E. ...	3rd Madras Infantry.
Esquire ...	Peacock, E. B. ...	District Judge.
Lt.-Col., C.M.G.	Peacocke, W. ...	R. E., D. Q. M. General.
Lt.-Colonel ...	Pennington, R. L. A.	1st Northumberland Fus.
Colonel ...	Penton, H. E. ...	7th Bombay Infantry.
Captain ...	Perkins, J. C. C. ...	S. C., Inspector of Ac- counts, Calcutta.
Captain, C.M.G.	Peyton, W. J. ...	7th Bombay Lancers.
Lt.-Colonel ...	Phillipps, C. R. ...	19th Bombay Infantry.
Captain ...	Phillips, I. ...	1-5th Gurkha Rifles.
Lieutenant ...	Phillips, R. S. ...	2nd Sikh Infantry.
Lieutenant ...	Pierce, F. G. ...	9th Madras Infantry.
Lieutenant ...	Pickard, F. B. B. ...	1st Royal W. Surrey Regt.
Major ...	Piers, W. B. ...	10th Bombay Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lieutenant ...	Pigou, F. H. ...	1st Infy., Hyd. Contg.
Captain ...	Pilkington, H. L. ...	Retired.
Captain ...	Pinney, R. J. ...	D. A. A. General.
Major ...	Pirie, C. P. W. ...	18th Bengal Lancers.
Esq., C.I.E. ...	Pitman, C. E. ...	Chief Supdt., Tel. Dept.
Lieutenant ...	Playfair, A. ...	Asst. Commr.
Lt.-Colonel ...	Plowden, F. H. ...	2nd Ox. L. Infantry.
Major ...	Pollard, W. C. ...	15th Bengal Lancers.
Major ...	Pollock, F. G. ...	7th Bengal Cavalry.
Lieutenant ...	Popham, E. L. ...	1st Madras Lancers.
Lt.-Colonel ...	Porter, A. R. ...	28th Punjab Infantry.
Lt.-Colonel ...	Porter, H. E. ...	24th Madras Infantry.
Esquire ...	Potter, C. D. ...	Survey Department.
Captain ...	Powell, A. L. ...	19th Hussars.
Captain ...	Powell, S. H. ...	R. E.
Captain ...	Powell, W. B. ...	9th Madras Infantry.
Lieutenant ...	Prentis, W. S. ...	29th Madras Infantry.
Captain ...	Pressey, A. ...	4th Bengal Infantry.
Major, D.S.O. ...	Preston, J. E. ...	S. C.
Lt.-Colonel ...	Prichard, G. P. M. ...	7th Madras Infantry
Colonel ...	Prickett, T. ...	A. A. General.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel ...	Pringle, A. ...	S. C., Offg. Pension Pay Master.
Lieutenant ...	Prissick, C. ...	15th Madras Infantry.
Colonel ...	Pulley, C. ...	1-3rd Gurkha Rifles.
Major ...	Purvis, A. B. ...	R. A.
Major ...	Quentin, W. ...	4th Bombay Infantry.
Major ...	Radcliff, S. G. ...	33rd Madras Infantry.
Major. ...	Radcliffe, A. W. T. ...	14th Sikhs.
Lt.-Colonel ...	Radford, O. C. ...	4th Punjab Infantry.
Lieutenant ...	Radice, A. H. ...	1st Gloucestershire Regiment.
Major ...	Rainey-Robinson R. M.	12th Madras Infantry.
Lt.-Colonel ...	Ramsay, J. G. ...	24th Punjab Infantry.
Major ...	Ramsden, H. F. S. ...	Asst. Secy., M. D.
Major ...	Ranken, G. P. ...	24th Punjab Infantry.
Colonel ...	Ranking, W. L. ...	U. Sup. List.
Major ...	Ravenshaw, H. A. ...	26th Punjab Infantry.
Captain ...	Rawlins, G. W. ...	12th Bengal Cavalry.
Lieutenant ...	Rawson, R. I. ...	1st Gloucestershire Regiment.
Br.-Genl., c.B. ...	Reid, A. J. F. ...	S. C., Comdg. Malakand Force.
Esquire ...	Rendell, T. H. ...	Survey Department.
Captain ...	Rennick, F. ...	40th Pathans.
Captain ...	Reynolds, T. G. C. ...	2nd Royal Innis, Fus.

ORDINARY MEMBERS—continued.

Rank:	Name.	Corps, &c.
Lieutenant ...	Ricketts, L. H. ...	12th Madras Infantry.
Lt.-Colonel ...	Riddell, W. H. ...	1st Bedfordshire Regt.
Major ...	Rideout, F. C. W. ...	A. C. General.
Lt.-Colonel, v.c.	Ridgeway, R. K. ...	Asst. Adjt.-General.
Colonel, C.M.G....	Rind, A. T. S. A. ...	A. Commy. Genl., Trans.
Major ...	Rippon, G. ...	29th Madras Infantry.
The Hon'ble, C.S.I.	Rivaz, C. M. ...	C. S.
Captain ...	Roberts, H. L. ...	1st Bengal Lancers.
Lt. the Hon'ble	Roberts, F. H. S. ...	1st King's R. Rifles.
Esquire ...	Robertson, F. A. ...	C. S.
Captain ...	Robertson, G. A. ...	15th Bengal Lancers.
Captain ...	Robertson, P. R. ...	1st Scottish Rifles.
Captain, D.S.O....	Robertson, W. R. ...	3rd Dragoon Guards.
Lt.-Colonel ...	Robinson, G. H. ...	1-1st Gurkha Rifles.
Lt.-Colonel ...	Rochfort, A. N. ...	R. H. A., Comdg. R. A. Meerut.
Major ...	Rodwell, E. H. ...	D. A. A. G. for Instn.
Lieutenant ...	Rolland, E. L. ...	2nd Highland L. Infy.
Captain ...	Roome, R. E. ...	6th Bombay Cavalry.
Captain ...	Roos-Keppel, G. O. ...	1st Royal Scots Fus.
Major ...	Rose, H. ...	1-3rd Gurkha Rifles.
Colonel, D.S.O....	Rose, H. M. ...	27th Punjab Infantry.

ORDINARY MEMBERS -continued.

Rank.	Name.	Corps, &c.
Lt-Colonel ...	Ross, T. F. ...	2nd Royal Scots.
Lieutenant ...	Rouse, A. H. T. ...	1st Madras Pioneers.
Lt-Colonel ...	Routh, W. R. ...	A. A. General.
Captain ...	Rowcroft, G. F. ...	15th Sikhs.
Lieutenant ...	Ruck, J. E. ...	1st Gloucestershire Regiment.
Lt-Colonel, D.S.O.	Rundall, F. M. ...	1-4th Gurkha Rifles.
Lt-Genl, K.C.B., K.C.M.G.	Russell, Sir B. C. ...	Comdg. Southern Dist. England.
Vety.-Captain	Rutherford, C. ...	A. V. D.
Major ...	Rycroft, W. H. ...	11th Hussars.
Lieutenant ...	Salkeld, R. E. ...	2nd Oxfordshire L. I.
Captain ..	Samson, L. L. R. ...	2nd Lancashire Fus.
Captain ...	Salvesen, C. E. ...	R. E., B. S. and Miners.
Major ..	Sanders, F. A. ...	1st R. Innis. Fus.
Captain ...	Sartorius, G. C. F. ...	19th Bombay Infantry.
Lt-Colonel ...	Saunders, M. W. ...	R. A., Offg. A. A. G. for R. A.
Lieutenant ...	Sawyer, G. H. ...	30th Punjab Infantry.
Lt-Colonel, C.I.E., D.S.O.	Scallon, R. I. ...	23rd Bombay Rifles.
Colonel, C.B. ...	Scott, C. H. ...	R. A., Inspector Genl. Ordnance.
Lieutenant ...	Scott-Elliot, C. R. ...	4th Madras Pioneers.
Captain ...	Scrasedickins, S. W. ...	2nd Highland L. Infy.
Captain ...	Searle, C. T. A. ...	36th Sikhs.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Selwyn, C. H. ...	Asstt. Secy., M. D.
Captain ...	Senior, H. W. R. ...	20th Punjab Infantry.
Major ...	Sewell, J. H. ...	Retired.
Captain ...	Shadwell, L. J. ...	D. A. A. G. for Instn.
Captain ...	Shakespeare, L. W. ...	Comdt. Naga Hills Military Police.
Major ...	Shaw, G. J. ...	6th Madras Infantry.
Lieutenant ...	Shea, J. S. M. ...	15th Bengal Lancers.
Maj., M.B., D.S.O.	Shearer, J. ...	I. M. S., Secy. to P. M. Officer in India.
Captain ...	Sherard, R. W. ...	5th Bombay Cavalry.
Captain ...	Sherwin, F. W. H. ...	Reserve List.
Captain ...	Sherwood, H. J. ...	R. E., Bengal Sappers and Miners.
Lt.-Col., D.S.O.	Shirres, J. C. ...	R. A.
Major ...	Shore, O. B. S. F. ...	18th Bengal Lancers, D. A. A. G. for Instn.
Lieutenant ...	Short, P. H. ...	1st Gloucestershire Re- giment.
Captain ...	Showers, H. L. ...	S. C., Offg. Pol. Agent.
Captain ...	Sillery, J. J. D. ...	25th Bombay Infantry.
Major ...	Simpson, C. N. ...	R. A.
Br.-Genl., C.B.	Simpson, G. ...	D. A. General.
Major ...	Simpson, G. G. ...	R. A.
Lieutenant ...	Simpson, W. H. ...	33rd Madras Infantry.
Lt.-Colonel ...	Sinclair, H. M. ...	R. E.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major, M.L. ...	Skinner, B. M. ..	R. A. M. C.
Captain ...	Skinner, F. St. D. ...	2nd Royal Sussex Regt.
Captain ...	Smith, F. A. ...	2nd Bengal Infantry.
Lieutenant ...	Smith, A. Le F. ...	2nd Bengal Infantry.
Esquire ...	Smith, H. W. ...	Supdt. of Telegraphs.
Captain, v.c., C.I.E.	Smith, J. Manners ...	S. C., Political Agent.
Lieutenant ...	Smith, R. C. ...	17th Bengal Cavalry.
Captain ...	Soady, G. J. F. M. ...	19th Punjab Infantry.
Major ...	Southey, R. ...	30th Bombay Infantry.
Major ...	Spankie, G. T. ...	Comdg. Oudh L. Horse.
The Ven'ble Archdeacon	Spens, A. N. W. ...	Eccles. Estabt.
Lt.-Colonel ...	Spratt, F. T. N. ...	R. E., Supdg. Engr.
Major, D.S.O. ...	Stanton, H. E. ...	R. A., Asst. Mily. Secy., Bombay.
Lt.-Colonel ...	Stawell, G. D. ...	A. A. General.
Captain ...	Stayner, F. S. ...	1st Gloucestershire Re- giment.
Maj.-General, K.C.I.E., C.B.	Stedman, Sir E. ...	S. C.
Major ...	Stevens, C. ...	Retired.
Lt.-Colonel ...	Stevens, C. F. ...	15th Madras Infantry.
Lt.-Colonel ...	Stevens, G. M. ...	R. A.
Captain ..	Stevens, M. ...	13th Bengal Infantry.
Lieutenant ...	Stevens, N. M. C. ...	21st Madras Pioneers.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Stevens, S. R. ...	33rd Madras Infantry.
Lieutenant ...	Stewart, J. A. ...	7th Bengal Infantry.
Lieutenant ...	Stewart, H. ...	4th Infantry, H. C.
Captain ...	Stirling, W. G. H. ...	23rd Madras Infantry.
Colonel, C. B. ...	Stopford, A. B. ...	R. A., Asst. Adj. Genl.
Captain ...	Stotherd, E. A. W. ...	4th Lancers, H. C.
Captain ...	Strachey, B. ...	S. C.
Captain ...	Strachey, J. ...	11th Bengal Infantry.
Captain ...	Strachey, R. J. ...	D. A. Q. M. Genl.
Captain ...	Strange, R. G. ...	R. A.
Lieutenant ...	Strick, J. A. ...	1st Shropshire L. I.
Captain ...	Strickland, W. A. W.	Deputy Commissioner.
Lieutenant ...	Strong, N. B. G. ...	1st Madras Lancers.
Major ...	Stuart, R. C. O. ...	R. A., Asst. D. G. of Ordnance.
Lieutenant ...	Stubbs, A. K. ...	1st Worcester Regt.
Major ...	Sturges, W. E. ...	Northumberland Fus.
Major ...	Sutton, H. G. ...	27th Madras Infantry.
Lieutenant ...	Swales, W. H. ...	Punjab Light Horse.
Captain ...	Swayne, E. J. E. ...	16th Bengal Infantry.
Captain ...	Swanston, C. O. ...	18th Bengal Lancers.
Lieutenant ...	Sweet, E. H. ...	1-2nd Gurkha Rifles.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Sykes, P. M. ...	2nd Dragoon Guards.
Major, M.B., D.S.O.	Sykes, W. A. ...	I. M. S.
Lieutenant ...	Sykes, W. E. ...	2nd Y. and L. Regt
Br.-Genl., K.C.B.	Symons, Sir W. P. ...	Comdg. Sirhind District.
Lieutenant ...	Tahourdin, S. M. ...	7th Bengal Cavalry.
Lieutenant ...	Tandy, E. A. ...	R. E.
Lt.-Colonel, C.I.E.	Temple, R. C. ...	S. C., Chief Comr. of the Andaman and Nicobar Islands.
Lieutenant ..	Temple, W. A. M. ...	1st Gloucestershire Re- giment.
Captain ...	Templer, C. B. ..	19th Bengal Lancers.
Major ...	Templer, H. ...	5th Punjab Cavalry.
Lt.-Col., D.S.O.	Teversham, R. K. ...	3rd Madras Infantry.
Lt.-Colonel ...	Thatcher, J. F. C. ...	22nd Bombay Infantry.
Captain ...	Thackeray, H. J. ...	2nd Highland L. I.
Vety.-Colonel	Thomson, H. ...	Prin. Vety. Officer.
Captain ...	Thomson, H. A. ...	2nd Connaught Rangers.
Major ...	Thomson, W. D. ..	Asst Judge Adve. Genl.
The Hon'ble ...	Thorburn, S. S. ...	C. S.
Captain ...	Thring, R. H. D. ...	(1st M. L.) D. A. A. General.
Captain ...	Thullier, H. F. ...	R. E.
Colonel ...	Thurburn, J. W. ...	R. E.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	Thwaytes, E. C. ...	24th Madras Infantry
Captain, D.S.O.	Tighe, M. J. ...	27th Bombay Infantry.
Lieutenant ...	Tillard, F. B. ...	R. E.
Captain ...	Tod, J. K. ...	Staff Captain, I. B.
Captain ...	Tomlin, Money-Shewan R. E.	R. E.
Lt-Colonel ...	Tounnochy, V. C. ...	3rd Sikhs.
Colonel ...	Travers, E. A. ...	1-2nd Gurkhas.
The Hon'ble, K C.S.I.	Trevor, Sir A. C. ...	C. S.
Captain ...	Trevor, H. ...	15th Sikhs.
Captain ...	Tribe, C. W. ...	38th Bengal Infantry.
Lieutenant ...	Tringham, A. M. ...	1st Royal W. Surrey Regt.
Colonel ...	Trotter, P. D. ...	Retired.
Colonel, C.I.E.	Tucker, L. H. E. ...	B. S. C., Inspt. Genl. of Police.
Captain ...	Tulloch G. S. ...	1st Gloucestershire Regiment.
Lt-Colonel ...	Turnbull, C. F. A. ...	1st Duke of Cornwall's Light Infantry.
Lieutenant ...	Turner, A. E. ...	R. E.
Colonel, C.B. ...	Turner, A. H. ...	S. C., Comdg. Fyzabad.
Major ...	Turner, J. G. ...	2nd Bengal Lancers.
Colonel ...	Turner, S. C. ...	R. E., Chief Engineer, Bengal Command.
Captain ...	Tweddell, F. ...	28th Punjab Infantry.
Captain ...	Tweddell, H. ...	4th Bengal Infantry.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lieutenant ...	Tylden-Patterson, E. C.	R. F., Bengal Sappers and Miners.
Maj.-General ...	Tyler, T. B. ...	R. A., I. G. Artillery in India.
Major ...	Unwin, G. B. ...	1st Punjab Cavalry.
Lt.-Colonel ...	Upcott, F. R. ...	2nd Punjab V. Rifles.
Captain ...	Van-Straubenzee, C. H. C.	2nd Suffolk Regiment.
Lieutenant ...	Vaughan, E. G. ...	Dy. A. C. Genl.
Captain ...	Vaughan, H. B. ...	7th Bengal Infantry.
Captain ...	Venables, C. J. ...	1st Gloucestershire Regiment.
Br.-General ...	Ventris, F. ...	Comdg. Bombay Dist.
Captain ...	Vickers, H. ...	23rd Madras Infantry.
Lt.-Colonel ...	Vivian, F. G. ...	38th Bengal Infantry.
Lieutenant ...	Wace, E. G. ...	R. E.
Maj.-Genl., C.B.	Wace, R. ...	R. A., D. G. of Ordnance in India.
Colonel ...	Walker, J. N. ...	S. C.
Captain ...	Walker, W. G. ...	1-4th Gurkha Rifles.
Lieutenant ...	Walker, W. R. ...	15th Madras Infantry.
Major ...	Wallace, A. ...	27th Punjab Infantry.
Major ...	Wallace, W. R. P. ...	1st Gloucestershire Regiment.
Esquire ...	Wallis, B. G. ...	C. E., Supdg. Engr.
Captain ...	Walters, H. F. ...	24th Bombay Infantry.
Captain ...	Warden, A. W. ...	3rd Lancers, H. C.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Captain ...	Ware, F. C. W. ...	S. C., Pol. Employ.
Captain ...	Warwick, C. S. ...	2nd Devonshire Regt.
Maj.-Genl., C.B.	Waterfield, H. G. ...	S. C.
Major ...	Watkis, H. B. B. ...	D. A. A. General.
Major ...	Watkins, L. G. ...	R. A., Ordnance Dept.
Lieutenant ...	Watling, F. W. ...	R. E., Executive Engr.
Lt.-Colonel ...	Watson, A. J. ...	Suffolk Regiment.
Captain ...	Watson, C. G. ...	R. A.
Captain ...	Watson, E. H. ...	33rd Punjab Infantry.
Captain ...	Watson, H. D. ...	1-2nd Gurkha Rifles.
Lieutenant ...	Watson, L. A. ...	31st Punjab Infantry.
Colonel ...	Watts, J. B. ...	Retired.
Captain ...	Webster, T. ...	12th Bengal Infantry.
Captain ...	Wellby, M. S. ...	18th Hussars.
Major, D.S.O. ...	Westlake, A. P. ...	1st Madras Lancers.
Br.-Genl., K.C.B., D.S.O.	Westmacott, Sir R. ...	Comdg. Nagpore Dist.
Lt.-Colonel ...	Westmorland, C. H. ...	6th Bengal Infantry.
Major, v.D. ...	Weston, E. ...	2nd Punjab Vol. Rifles.
Lt.-Colonel ...	Wheatley, H. S. ...	2-3rd Gurkha Rifles.
Major ...	Whistler, A. E. ...	2nd Bengal Infantry.
Major ...	Whittall, F. V. ...	1st Infantry, H. C.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Major ...	White, F. P. L. ...	5th Punjab Infantry.
General, V.C., G.C.B., G.C.S.I., G.C.I.E.	White, Sir G. S. ...	Q. M. G., War Office.
Captain ...	White, W. E. ...	1st Bengal Infantry.
Lieutenant ...	Whitehead, J. H. ...	33rd Madras Infantry.
Major ...	Whyte, C. W. F. ...	17th Bombay Infantry.
Captain ...	Whyte, J. F. ...	S. C.
Lieutenant ...	Wigram, C. ...	18th Bengal Lancers.
Lt.-Colonel ...	Wilford, E. P. ...	1st Gloucestershire Re- giment.
Captain ...	Willcock, S. ...	1st Gloucestershire Re- giment.
Major, D.S.O. ...	Willcocks, J. ...	Leinster Regiment.
Lt.-Colonel ...	Wilkieson, C. B. ...	R. E.
Captain ...	Williams, C. S. ...	43rd Gurkha Rifles.
Captain ...	Williams, F. T. ...	D. A. A. General.
Captain ...	Willoughby, M. E. ...	2nd Bengal Lancers.
Major ...	Willshire, E. M. ...	1st Royal Highlanders.
Captain ...	Wilson, C. E. ...	2nd Durham L. I.
Colonel, C.B. ...	Wilson, E. H. ...	S. C.
Colonel ...	Wilson, F. A. ...	S. C.
Lt.-Colonel ...	Wilson, W. B. ...	D. J. Adv. Genl.
Captain ...	Wimberley, C. I. ...	8th Bengal Cavalry.
Captain ...	Wingate, A. W. S. ...	14th Bengal Lancers.

ORDINARY MEMBERS—continued.

Rank.	Name.	Corps, &c.
Lt.-Colonel ...	Wingate, G. ...	Asst. Commy. General.
Major ...	Wintour, F. ...	Asst. Adjutant General.
Lt.-Genl, K.C.B.	Wolseley, G. B. ...	Comdg. the Forces, Madras.
Lt.-Colonel ...	Wood, E. J. F. ...	10th Bengal Lancers.
Major ...	Wood, E. P. ...	20th Madras Infantry.
Captain ...	Woodyatt, N. G. ...	D. A. A. General for Musketry.
Major ...	Wrench, A. J. C. ...	Late 1st R. Welsh Fusi- liers.
Major ...	Wright, G. ...	R. A.
Lt.-Col, D.S.O., M.B.	Wright, F. W. ...	I. M. S.
Lieut.-Col., V.D.	Wright, W. B. ...	Midland Rail. V. Rifles.
Colonel, C.S.I....	Wylie, H. ...	S. C.
Major ...	Wylly, H. C. ..	2nd Derbyshire Regt.
Major ...	Yate, W. G. ...	5th Bengal Cavalry.
Lieutenant ...	Young, D. C. ...	1-4th Gurkha Rifles.
Lt. Colonel ...	Young, E. A. ...	A. A. General.
Captain ...	Young, F. deB. ...	6th Bengal Cavalry.
Br.-General, C.B	Young, G. F. ...	D. A. General.
Lt.-Colonel ...	Young, H. H. ...	S. C.
Major ...	Young, W. B. ...	9th Madras Infantry.
Major ...	Young, W. H. ...	Military Accounts De- partment.
Captain, C.I.E.	Younghusband, E. F.	S. C.

SUBSCRIBERS TO THE JOURNAL.

The Secretary to the Government of India, Military Department.

The Adjutant General in India.

The Assistant Quarter Master General, Intelligence Branch.

The Secretary, Sergeants' Mess, No. 2, Mountain Battery.

Ditto Soldiers' Library, Royal Irish Regiment.

Ditto Sergeants' Mess, 3rd Bn. Rifle Brigade.

The President, Sergts' Mess, 4th Dragoon Guards.

Ditto Sergeants' Mess, 5th Dragoon Guards.

Ditto Sergeants' Mess, 2nd. Bn. Royal Munster Fusiliers.

Ditto Sergeants' Mess, 1st Bn. Cheshire Regiment.

Ditto Officers' Mess, 1st Duke of Cornwall's Lt. Infy.

Ditto	Regtl. Library,	ditto.
-------	-----------------	--------

Ditto Regtl. Reading Room. ditto.

Ditto Sergeants' Mess, ditto.

Ditto Officers' Mess, 2nd Royal Inniskilling Fusiliers.

**The Secretary, Non-Commissioned Officers' Mess, R. E., Bengal
Sappers and Miners.**

The Mess Secretary, 4th Bengal Infantry.

The Mess Secretary, 7th Bengal Infantry.

The Mess President, 9th Gurkha Rifles.

The Mess Secretary, 11th Bengal Infantry.

The President, Officers' Mess, 14th Bombay Infantry.

The Mess President, 26th Punjab Infantry.

The Mess Secretary, 37th Dogras.

The Mess Secretary, 39th Garhwal Rifles.

The Mess President, 23rd Madras Infantry.

Secretary, Bengal United Service Club, Calcutta.

The Honorary Secretary, United Service Club, Simla.

The Honorary Secretary, Station Library, Simla.

The Secretary, Lahore and Meean Meer Institute.

The Supdt., Scientific Library, Bengal Sappers and Miners.

The Secretary, Royal Engineer Library, Triplicane, Madras.

The Secretary, Madras Club.

The Honorary Secretary, Faizabad Club.

The Secretary, Sirhind Club.

The President, Kamptee Club, Kamptee,

The Secretary, Club of Wn. India, Poona.

The Officer Comdg. 3rd Admist. Bn., N. W. P. V. R., Allahabad.

Ditto **Mussoorie Volunteer Rifles.**

**The International News Company, 83 and 85, Duane Street,
New York, U. S. A.**

Messrs. William H. Guild & Co., 11, Bromfield Street, Boston,
Mass., U. S., America.

F. A. Reddie, Esq., Bombay.

The German Imperial Consulate, Simla.

The Commandant, Purandhar Sanitarium, Purandhar.

Messrs. B. Visser & Co., Batavia, Java.

Major C. F. Plant, 3rd Queenslanders, Australia.

FREE LIST.

Field Marshal the Right Hon'ble Viscount Wolseley, K. P., etc.,
 Commander-in-Chief, War Office.
 The Right Hon'ble the Secretary of State for India, Whitehall,
 London, S. W.
 The Director of Military Intelligence, 18, Queen Anne's Gate,
 London, S. W.
 The Director General, Military Education, Whitehall, London,
 S. W.
 The Assistant Adjutant General. Intelligence Division, 18,
 Queen Anne's Gate, London, 2 copies.
 The Secretary, Royal Geographical Society, 1, Saville Row,
 London, S. W., England.
 Proceedings of the Royal Artillery Institution
 The Librarian, Staff College, Sandhurst, England.
 The Librarian, Royal Military College, Sandhurst, England.
 The Librarian, Royal Military Academy, Woolwich, England.
 The Military Instructor, Poona.

EXCHANGES.

The Smithsonian Institution Proceedings.
 The Journal of the Asiatic Society of Bengal.
 The Journal of the Royal Engineers' Institution.
 The Journal of the Royal United Service Institution.
 The United Service Magazine.
 The Broad Arrow, London.
 The Army and Navy Gazette.
 The United Service Gazette.
 The Civil and Military Gazette.
 The Pioneer.
 The Englishman.
 The Morning Post.
 The Indian Daily News.
 The Bombay Gazette.
 The Times of India.
 The Madras Mail.
 The Indian Volunteer Record.
 Indian Engineering.
 The Proceedings, Imperial Russian Geographical Society.
 Voenni Sbornik from the Military Attaché, Imperial Russian
 Embassy, Chesham House, London, S. W.
 The Memorial D' Artillerie.
 Revue du Cercle Militaire.
 Jahrbucher für die deutsche Armee und Marine.
 Militar Wochenblatt.
 Schweizerische Zeitschrift für Artillerie und Genie.
 Militar Geographischen Institute, Wien, Austria.
 International Revue über die gesammten Arméén and Flotten.

EXCHANGES—(continued.)

The United States Cavalry Association Journal.
The Military Service Institution of the United States.
The Quebec Literary and Historical Journal.
The United Service Institution of New South Wales Journal.
The United Service Institution of Victoria Journal.
The Aldershot Military Society Journal.
The United States Artillery Journal, America.
The Colonial Military Gazette, Australia.
Records and Memoirs of—
Geological Survey of India.
Geological Survey, Annual Reports Washington.
Biological Survey.
The Bureau of Ethnology, United States, America.

The Journal
OF THE
United Service Institution in India.

VOL. XXVIII.

January 1899.

No. 134.

THE FIRST SIKH WAR, 1845-46.

LECTURE BY LIEUTENANT-COLONEL H. M. SINCLAIR, R. E.

Wednesday, 28th September 1898.

MAJOR-GENERAL SIR EDWIN COLLEN, K.C.I.E., C.B.,
IN THE CHAIR.

Having found myself, a stranger to India, stationed for some time at Ferozepore, the outpost of British dominion before the war which we are about to consider, I was naturally led to interest myself in the history of the brave and stalwart race whose country lay around me, and in the events which led to our conquest of the Punjab. My own previous ignorance of those events has led me to think that possibly others are not very much better informed; and there is no doubt that the study of the period of history just preceding our own time is more troublesome and less cultivated than that of the great events which are crystallized in standard books or within our own recollection. I therefore hope that you will not find the subject of my lecture a twice-told tale, although I lay claim to no originality of facts or treatment and am only attempting to put before you the story of one of our most arduous Indian campaigns against an enemy such as we had never before met with out of Europe.

It would be beyond my purpose and limits to trace the origin of the Sikhs in detail. I will only remind you that they

are not so much a race as a religious community, bound together by loyalty to no dynasty or fatherland, but to the tenets of a pure and free monotheistic religion and the impulse of a brave and warlike nature. Nanak, the founder of this religion, was born as far as back as 1469, but for 300 years his followers, though steadily increasing in numbers, made but little political progress. On the break up of the Moghul Empire after the death of Aurungzib in 1707 their leaders endeavoured to assert their independence in the Punjab, but the successive Persian invasions of Nadir Shah, and of the Afghan Durani Prince, Ahmed Shah, swept across their native territory and involved them in frequent disaster, while inuring them to hardship and fighting, and cementing their self-reliance and national spirit. It was not until 1763 that they succeeded in inflicting a serious and final defeat on the Afghan leader; when they established themselves in undisputed possession of the country between the Jumna and the Jhelum. Their Government was now purely Republican and Tribal. But Chiefs and Princes soon asserted themselves; and finally, by the inevitable law which brings all Eastern Governments to an ultimate despotism, the whole country about the beginning of this century became consolidated into a Kingdom under the celebrated Ranjit Singh, the Lion of the Punjab. His family connections began, and his bravery, vigour and astuteness carried out, a career of uninterrupted success and aggrandisement, so that at his death he bequeathed to the Sikh State a Kingdom extending from the Sutlej to the Khyber and from Ladak to Multan. His territory would undoubtedly have been extended much further to the Eastward had not a rival power, with which he was too shrewd to try conclusions, been simultaneously advancing to the West. For, while the Sikhs had been consolidating their freedom and establishing their rule in the Punjab, the contest for the supremacy of the Empire had been fought out between the Mahrattas, the only remaining warlike people of Southern and Central India, and the Merchant Company of British intruders. The battles of Assaye and Laswari had decided that supremacy in our favour, and the assistance Lord Lake received from the Cis-Sutlej Chiefs of the Punjab, was rewarded by a guarantee of independence against which Ranjit Singh chafed but dared not act. But not only did Ranjit Singh bequeath to his successors an extended and well-knit Kingdom, he had also brought his army, with the assistance of European Officers, to a high pitch of training and efficiency: that army was composed of materials remarkably

different from any other Asiatic people. Strong of body, active, intelligent, unfettered by the bonds of caste prejudice, full of courage and gifted with wonderful stamina, the Sikh has made the finest soldier in the world, and it is not too much to affirm that the Sikh army became, under the training of the skilled officers I have mentioned, the best rank-and-file of their time. They wanted but officers from General to Subaltern to be invincible. This, fortunately for us, they had not.

On the death of Ranjit Singh in 1839, the Government passed to his son, Kharak Singh, a practical imbecile. From that time ensued a period of lawlessness, murder and treachery of which the details would be tedious, but of which the result was that the power of the army steadily increased until it resembled exactly that of the Pretorian guards under the later Roman Emperors or of the Janissaries of Constantinople. Various claimants to the throne and aspirants to the office of Vizier were set up and assassinated, until in the autumn of 1845 the nominal ruler was the infant Dhuleep Singh, a putative son of the great Raja, such actual power as remained being exercised by his mother, Rani Janda Kaur (once a dancing girl) with the assistance, as Ministers, of adventurers who had risen in the late Raja's service. Of these, Lall Singh, once a clerk in the treasury, now the lover of the Rani, was made Vizier, and Tej Singh, Commander-in-Chief, while a powerful feudatory, Golab Singh, Raja of Jammu, watched events from a distance and prudently avoided any responsible position. It was now clear to these rulers that the army was master of the position and arbiter of their fate. They had practically abrogated the constitution and governed themselves and their officers and dictated to the Ministers through a parliament elected from the ranks.

The situation was intolerable. Neither Prince nor Minister was safe for an hour from the greed, the passions and the revenge of the irresponsible soldiery. The Queen and the Chiefs now conceived the bold, if unpatriotic, plan of hurling the army on the British bayonets in the hope that they would thus get rid of their troublesome masters. History scarcely records a more bold and able conception, and while reprobating its execution one can hardly withhold admiration of the design.

But its execution would have been impossible unless the Sikh Army had grounds for distrusting and seeking a quarrel with the British. In the height of his power and at our lowest period of humiliation, Ranjit Singh and his successor had

are not so much a race as a religious community, bound together by loyalty to no dynasty or fatherland, but to the tenets of a pure and free monotheistic religion and the impulse of a brave and warlike nature. Nanak, the founder of this religion, was born as far as back as 1469, but for 300 years his followers, though steadily increasing in numbers, made but little political progress. On the break up of the Moghul Empire after the death of Aurungzib in 1707 their leaders endeavoured to assert their independence in the Punjab, but the successive Persian invasions of Nadir Shah, and of the Afghan Durani Prince, Ahmed Shah, swept across their native territory and involved them in frequent disaster, while inuring them to hardship and fighting, and cementing their self-reliance and national spirit. It was not until 1763 that they succeeded in inflicting a serious and final defeat on the Afghan leader ; when they established themselves in undisputed possession of the country between the Jumna and the Jhelum. Their Government was now purely Republican and Tribal. But Chiefs and Princes soon asserted themselves ; and finally, by the inevitable law which brings all Eastern Governments to an ultimate despotism, the whole country about the beginning of this century became consolidated into a Kingdom under the celebrated Ranjit Singh, the Lion of the Punjab. His family connections began, and his bravery, vigour and astuteness carried out, a career of uninterrupted success and aggrandisement, so that at his death he bequeathed to the Sikh State a Kingdom extending from the Sutlej to the Khyber and from Ladak to Multan. His territory would undoubtedly have been extended much further to the Eastward had not a rival power, with which he was too shrewd to try conclusions, been simultaneously advancing to the West. For, while the Sikhs had been consolidating their freedom and establishing their rule in the Punjab, the contest for the supremacy of the Empire had been fought out between the Mahrattas, the only remaining warlike people of Southern and Central India, and the Merchant Company of British intruders. The battles of Assaye and Laswari had decided that supremacy in our favour, and the assistance Lord Lake received from the Cis-Sutlej Chiefs of the Punjab, was rewarded by a guarantee of independence against which Ranjit Singh chafed but dared not act. But not only did Ranjit Singh bequeath to his successors an extended and well-knit Kingdom, he had also brought his army, with the assistance of European Officers, to a high pitch of training and efficiency : that army was composed of materials remarkably

different from any other Asiatic people. Strong of body, active, intelligent, unfettered by the bonds of caste prejudice, full of courage and gifted with wonderful stamina, the Sikh has made the finest soldier in the world, and it is not too much to affirm that the Sikh army became, under the training of the skilled officers I have mentioned, the best rank-and-file of their time. They wanted but officers from General to Subaltern to be invincible. This, fortunately for us, they had not.

On the death of Ranjit Singh in 1839, the Government passed to his son, Kharak Singh, a practical imbecile. From that time ensued a period of lawlessness, murder and treachery of which the details would be tedious, but of which the result was that the power of the army steadily increased until it resembled exactly that of the Pretorian guards under the later Roman Emperors or of the Janissaries of Constantinople. Various claimants to the throne and aspirants to the office of Vizier were set up and assassinated, until in the autumn of 1845 the nominal ruler was the infant Dhuleep Singh, a putative son of the great Raja, such actual power as remained being exercised by his mother, Rani Janda Kaur (once a dancing girl) with the assistance, as Ministers, of adventurers who had risen in the late Raja's service. Of these, Lall Singh, once a clerk in the treasury, now the lover of the Rani, was made Vizier, and Tej Singh, Commander-in-Chief, while a powerful feudatory, Golab Singh, Raja of Jammu, watched events from a distance and prudently avoided any responsible position. It was now clear to these rulers that the army was master of the position and arbiter of their fate. They had practically abrogated the constitution and governed themselves and their officers and dictated to the Ministers through a parliament elected from the ranks.

The situation was intolerable. Neither Prince nor Minister was safe for an hour from the greed, the passions and the revenge of the irresponsible soldiery. The Queen and the Chiefs now conceived the bold, if unpatriotic, plan of hurling the army on the British bayonets in the hope that they would thus get rid of their troublesome masters. History scarcely records a more bold and able conception, and while reprobating its execution one can hardly withhold admiration of the design.

But its execution would have been impossible unless the Sikh Army had grounds for distrusting and seeking a quarrel with the British. In the height of his power and at our lowest period of humiliation, Ranjit Singh and his successor had

remained faithful to the British Alliance. Why then should his traditional policy be changed? It appears to have been due very much to our own action.

The Government of India had not been blind to the anarchy that had arisen in the Punjab. Lord Ellenborough was convinced that a crisis might at any moment occur, and had located a large force at the new Cantonment of Amballa. Our outposts for some years had been the small fort of Ludhiana, where the great North-Western road crosses the Sutlej, and Ferozepore on the direct Delhi-Lahore road, which had fallen to us for want of heirs some time before, and where considerable magazines and stores were protected by a slight intrenchment and a small and very isolated garrison, the place having been used as a *dépôt* during the Afghan War. On Lord Ellenborough's recall Sir H. Hardinge had been sent out as Governor-General with peace and retrenchment as his watchwords, and he endeavoured to prevent suspicion but ensure security by quietly strengthening the different garrisons. The Sikhs, however, got wind of these movements, and of other still more threatening measures and could not understand that the strengthening of the garrisons could be meant for any but aggressive purposes. Our Agent at that time on the frontier, Major Broadfoot, though able and active, seems to have acted injudiciously and with an assumption of hostile intention on the Sikhs' part which increased their distrust and suspicion, until finally the soldiers talked of nothing but the impending war, and vowed devotion to the Khalsa at the tomb of Ranjit Singh.

Their treacherous leaders took every opportunity of arousing in the ranks of the soldiers a spirit of hostility to the English, against whom they themselves bore no ill-will. They only hoped that they might thus rid themselves of the all-powerful janissaries who at a word might sentence themselves and their families to death. Towards the end of the year 1845 several circumstances combined to give colour to the anticipations of the soldiery. Major Broadfoot announced that in the event of the young Raja's death, who was then ill, the Royal estates south of the Sutlej, which Ranjit Singh had possessed, would be escheated to the British Government, and two villages, where some disturbance had taken place, were so confiscated. Sir C. Napier was believed to be moving up a force in Sindh towards the Sikh frontier at Multan, and materials for a bridge-of-boats had been brought up the Sutlej under escort to Ferozepore, where

Major Broadfoot was actively drilling their crews. These events and the general movement of troops, and finally the approach of the Governor-General himself to the frontier, dispelled all further caution on the part of the Sikh Army. They rushed to arms, and on the 11th December, 1845, tumultuously crossed the Sutlej some 12 miles above Ferozepore at a ford of that river which is still in use.

We have seen that Sir H. Hardinge had been unwilling to strengthen his outlying garrisons more than could be avoided for fear of that very cause of offence which in other ways was nevertheless given. It does not seem that any one in India had anticipated the actual course events would take. That a sudden and unprovoked invasion by the whole strength of the Sikh Army would be the first stroke, was a likelihood to which no one gave serious thought. Our countrymen then despised the Sikh soldiery too much to credit them with so bold a game. It is now strange, knowing them as we do, to find that not long before the war the Sikhs were considered by our agents unable to stand up to the Afghans or even the Kashmir hillmen, while Major Broadfoot described them as a rabble daily deteriorating in military efficiency.

It is difficult to find out exactly the stations and numbers of our troops on the outbreak of war. They are variously stated by different authors, but it appears that at Ferozepore there were some 7,000 men of whom 1,000 only were British. At Ludhiana a garrison of 5,000, and at Amballa about 11,000 men, the guns of this force united, being about 68. At Meerut was a reserve of 10,000 with 26 guns.

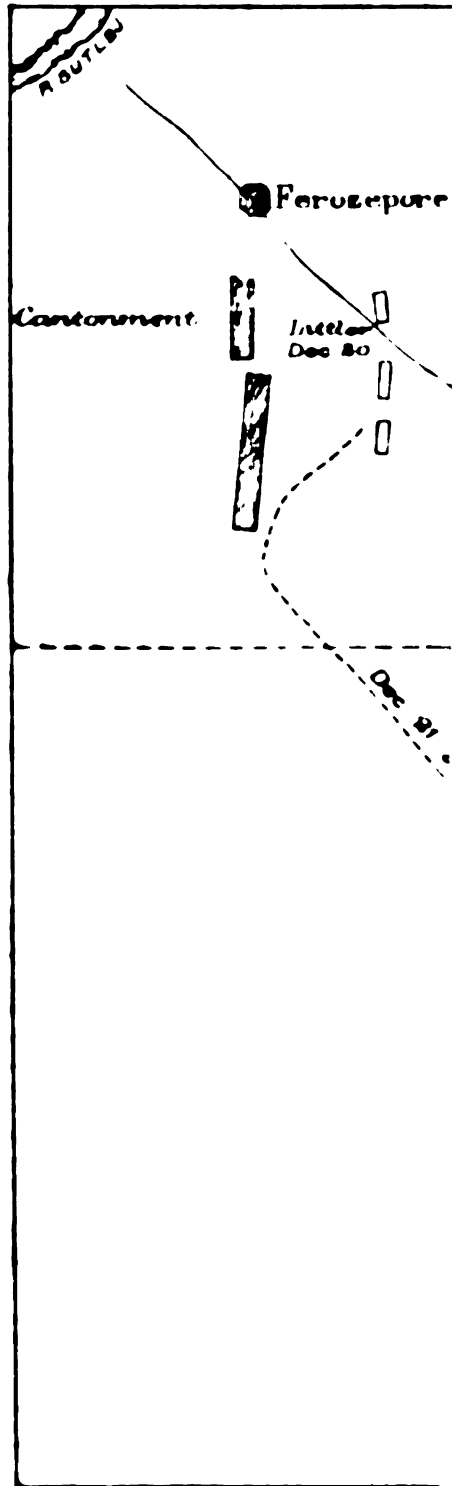
The strategical position at this time was all in favour of the Sikhs. They had interposed between our main body and our isolated garrison at Ferozepore, which, with a considerable collection of stores and munitions, was but feebly entrenched and very rashly exposed. Had the Sikhs had a bold and skilful leader whom they trusted, they must have had no difficulty in wiping out this garrison with their overwhelming numbers and force of artillery and would thus have raised the spirits of the army with an initial victory and given a very serious blow to our prestige. Instead of that, however, they contented themselves after their first dash across the Sutlej with entrenching themselves on the south bank of the river, like a colt which has suddenly broken loose from its stable, and finding itself in unaccustomed liberty pauses, startled at its own rashness, not knowing what to do next. The rank-and-file were for pushing on at once to Ferozepore, but the leaders,

true to their dark and treacherous plot and dreading a victory more than a defeat, urged them to leave this paltry garrison and add to the glory of the Khalsa by the capture of a British Governor-General. Sir John Littler, who commanded at Ferozepore, had called a Council of war to consult as to what should be done at this crisis. With one exception the Commanding Officers recommended, as Councils always do, the prudent course of remaining quiet and fortifying. Learning, however, that the Sikhs were actually across the river, he next morning ordered out the greater part of his force and offered battle. But as the Sikhs declined the challenge and nothing happened, I suppose that he never intended to do more than hold out to them the tail of his coat to tread on.

Meanwhile the news of invasion had reached Sir H. Hardinge and the Commander-in-Chief, Sir Hugh Gough, at Amballa. Immediately every available man was put in motion. Two British regiments, stationed in the Simla hills, were sent down post haste, and the garrisons of Ludhiana and Amballa started for the front, while the more distant force at Meerut was also set in motion.

The Ludhiana force concentrated at Bassian. On the 13th the Amballa troops reached Sirhind and established touch with them. On the 14th the army was formed into brigades and divisions. On the 15th Gough's division marched 26 miles to Lattala, and next day, 30 miles, to Wadni, effecting on the way at Bassian a junction with the Governor-General and the Ludhiana troops. On the 17th the whole force moved 10 miles to Charak, and the following day, 21 miles, to Mudki. This, I think, is a very remarkable march. The Amballa force had covered a distance of 150 miles in 7 days or an average of over 21 miles a day. I believe Major Broadfoot and his subordinates collected supplies from the country for the troops as they marched, but even so they must have been in a high state of training and organization to stand so sudden and severe a strain. We have in our books of military history and tactics plenty of instances given of forced marches of 15 to 20 miles on good roads and in temperate regions. It seems to me a pity that such performances of our own troops on deep and sandy roads and in a trying climate are almost lost in oblivion, and never quoted by our Military Historians.

Considering that this march was made through a Sikh country with no enemy in occupation, it seems strange that the Sikh Army were not better informed of the movements of



the British force. It was only on the near approach of Sir Hugh Gough that they took any steps to meet him.

They now moved out from their camp by the river, where they had assembled a force variously estimated at from 30 to 40,000 men, and took up a position at the village of Ferozeshah, which they proceeded to fortify. Although in peace time the army had been lawless and out of hand, yet such was their military instinct that war once declared they yielded hearty and all too loyal obedience to their Chiefs, and worked at fortifications, dragging heavy guns and all the drudgery of campaigning with enthusiastic alacrity, which contrasted well with the sluggish obedience of mere mercenary troops. They trusted, however, more to the spade than the bayonet, and no doubt the youthful Khalsa, though active and strong of heart, were awed by the approach of so far famed an opponent and their tactics involuntarily became modified accordingly. Instead, therefore, of advancing their whole available force to fall upon the wearied British army before it could join hands with the Ferozepore garrison, they kept their main body in its entrenchments at Ferozeshah, under Lall Singh, with a reserve under Tej Singh, watching General Littler; and sent forward a small force of regulars supported by a cloud of cavalry to meet the British.

We left Sir Hugh Gough arriving tired and thirsty at the village of Mudki after a 21-mile march. The men had just settled down to cooking their dinners and resting after their fatigues, when intelligence was brought in that the Sikhs were approaching. Instantly all was in motion and so eager were the men for the fight that I have read somewhere that our sepoy fought in nothing but their dhoties and belts. Our force advanced with the artillery in the centre, cavalry on both flanks with the infantry massed in contiguous columns behind it, and a reserve in rear of all. As the army approached its unknown foe, reports came in simultaneously from both sides that the Sikh cavalry in clouds were turning both our flanks.

I should mention here that the ground at Mudki is an absolutely flat and level plain, covered with low prickly scrub and stunted trees amongst which the drifting sand has here and there formed considerable ridges, so that the numbers and disposition of the enemy on either side were difficult to ascertain. On hearing the serious menace to his flanks Gough launched his cavalry out on either hand and a series of brilliant charges broke and turned the Sikh Irregulars. Meanwhile the

guns had opened out and the infantry had deployed into line in the centre. Hitherto both sides had been advancing, but after the failure of their cavalry the Sikh guns and infantry halted, while we went on. The impetus thus gained settled the day. The Sikh guns were boldly served and dealt destruction into our ranks. The Sikh infantry fell back doggedly and with many a bold stand and skilful ambush, disputing every inch of ground for 5 miles until night closed the contest and put an end to pursuit, when our exhausted troops returned to Mudki with a trophy of 17 guns.

At the time our leaders believed that they had the whole Sikh Army in front of them, Lord Gough's despatch mentioned 30,000 and 40 guns and H. Edwardes says in his account: "It is no easy matter for 14,000 to thrash 30 or 40,000." It seems certain that the Sikhs had no more than some 2,000 infantry, 22 guns, and a horde of irregular cavalry, amounting to 8 or 10,000, but of no great value. It was on their part a reconnaissance in force which we magnified into a general action. Our losses were 872 men killed and wounded, amongst whom were the famous Sir R. Sale, Quarter Master General, and General McCaskill, a Peninsula Veteran. In all probability the Sikh losses did not exceed our own.

While one cannot but admire the vigour and dash with which our troops advanced to attack an enemy of whom they knew neither the numbers nor the position after an arduous march of 21 miles, yet it must be acknowledged that had they met, as they thought they were meeting, and might have met, the entire Sikh Army, the result might have been a terrible disaster to our arms. Our intelligence seems to have been most defective. An officer riding confidently forward to join his regiment at Ferozepore was captured by the Sikh outposts, and no attempt seems to have been made to ascertain either from a cavalry advance guard or from communication with Sir J. Littler what the enemy were about, and that at a time when Napoleon's lessons were nearly as recent as Moltke's are now.

Our leaders evidently felt that the battle of Mudki was no very decided victory, and it was wisely determined that before making a further attack a junction should be effected with Sir J. Littler and the Ferozepore force. It was ascertained that the Sikh main army was in position at Ferozeshah entrenched in an oblong, or as some describe it, horse-shoe form. Their force was upwards of 30,000 strong with

80 or 6

the safety of the Empire. He took the fiery old Chief aside and pointed this out, refusing to countenance so rash a step. In the light of what followed it is probable that his action saved the force from a grave peril.

~~the~~ moved out and the infantry had declared intoling in

chief

with Sir J. Littler and the ferozepore force. It was as-
certained that the Sikh main army was in position at Feroze-
shah entrenched in an oblong, or as some describe it, horse-
shoe form. Their force was upwards of 30,000 strong with

80 or 90 guns, many of large calibre, and including 10 to 12,000 horsemen.

The trenches, originally slight and imperfect, had been raised since Mudki, to breast height, except on the east face, where the camp was almost unprotected. The situation of Ferozeshah was, like Mudki, a perfectly level plain, but apparently at that time more open and devoid of scrub and cover. The village lies some two miles only from the main road from Mudki to Ferozepore.

The day following the battle of Mudki the British army was re-inforced by two European and two Native regiments, the former having made from the Simla hills an even more remarkable march than the main army. A small detachment of heavy guns also arrived. The next day Sir H. Hardinge, whose position as Governor-General and a senior and experienced soldier in the camp was somewhat anomalous, offered to serve under Sir Hugh Gough as 2nd-in-Command. He brought to the councils of the army a calm, cool and expert judgment which was peculiarly wanted at this juncture, for the veteran Commander-in-Chief was a man in whom those qualities were conspicuously lacking. As brave as any of his greatest countrymen, he yet lacked that self-control and clearness of head in moments of excitement which are so essential in a Commander. Once the roar of battle was heard he forgot all his plans, or those made for him, refused to wait for his artillery to make its effect, and was for hurling his infantry at all costs on the enemy's bayonets. No doubt Mudki opened the eyes of the staff and the arrangement with Sir H. Hardinge was made with a view to restraining the fiery impetuosity of the Chief.

On the morning of the 21st the British force moved out from Mudki, leaving 2 Native regiments to guard the sick and baggage and took the direction of Ferozepore, south of the road, in order to meet the force moving out from that place under Sir J. Littler. When opposite Ferozeshah a halt was made to wait for Littler. And at this moment the impetuous Commander-in-Chief proposed to make the attack at once without waiting for the Ferozepore force. The position of Sir H. Hardinge was peculiar and delicate. He was 2nd-in-Command to Gough, but still Governor-General and responsible for the safety of the Empire. He took the fiery old Chief aside and pointed this out, refusing to countenance so rash a step. In the light of what followed it is probable that his action saved the force from a grave peril.

Littler arrived unmolested about $\frac{1}{2}$ past one, and the plan of attack originally drawn up was put in execution. This was to attack the south and west faces of the Sikh position so as to cut them off from Ferozepore and the Sutlej and interpose between them and their reserve. The army was formed in four divisions: The 1st under Sir H. Smith, in reserve; on the right the 2nd division, under Major-General Gilbert; in the centre the 3rd division, under Brigadier Wallace, and on the left the 4th, that of Sir J. Littler. The artillery was principally massed between Wallace's and Gilbert's divisions. Sir Hugh Gough commanded on the right, Sir H. Hardinge on the left. Littler commenced the attack on the west face at about 4 P.M. Under a galling and destructive fire he advanced to within 150 yards of the enemy's batteries and gave the order to charge. But it was here that the Sikhs had dug their deepest trenches and posted their heaviest artillery, defended by their best troops. The attack wavered, and was not pressed home. The British battalion on the right halted and wheeled about, a course followed not unnaturally by their native comrades. The attack on the Khalsa right had failed so signally that it could not be renewed, and the troops composing it bivouacked out of fire or streamed off towards Ferozepore.

Wallace in the British centre had been directed on the south-west angle of the Sikhs' entrenchment. He was unable to deliver his attack till Littler's had failed, but the 9th Europeans with Native regiments vying with their English comrades, carried all before them at the point of the bayonet and broke their way into the camp. It should be mentioned to their credit that the 14th Native Infantry of Littler's Division had rallied and materially assisted this attack.

Gilbert had before him the south and south-east faces. His two splendid British regiments, the 29th and 1st Europeans gallantly supported by their Native comrades, carried the trenches and captured the guns in them. But behind them stood a wall of Sikh Infantry as steady as their foes, pouring into the exhausted British a close and deadly fire. At this moment a magazine exploded under the feet of the 1st Europeans and rent the regiment in two. As night approached they fell back and took up a position about 300 yards from the enemy's trenches.

The battle was by no means won. Sir H. Smith with the reserve was ordered up and is said to have penetrated to the village of Ferozeshah in the centre, but he, too, retired in the face of the determined and unyielding obstinacy of the Sikhs.

A battery on the right was pouring death into the British ranks and could not be reached. Orders were given to the 3rd Dragoons to carry it. They charged, "the leaders filling up the yawning trench with their own numbers and those who followed, crossing on a living bridge of their comrades. They slew the gunners and silenced the battery. Then facing the whole Khalsa army within the intrenchments they swept through their camp with loud huzzas over tents, ropes, pegs, guns, fires and magazines, cutting down all who opposed their passage, and having traversed the enemy's position from side to side, emerged among their friends with numbers thinned, indeed, but covered with imperishable glory."

Night had now set in. The expense magazines of the enemy were exploding in every direction. The camp was on fire and the troops who had won the entrenchments were compelled to retire, and bivouacked on the edge of the trenches. The position appeared desperate. Littler's troops were dispersed: Wallace's and Gilbert's were mixed in hopeless confusion. Smith, who had got furthest in and stayed longest, was driven back during the night, and retired some two miles to the rear. In fact, Gilbert's and part of Wallace's divisions were the only troops facing the enemy. They were lying hungry, thirsty, cold, and exposed on the bare ground when the Sikhs brought up some heavy guns and began to bombard them at close range. Sir H. Hardinge, who was trying with other commanders to restore order in the shaken ranks, called on the 80th and 1st European Light Infantry to charge the guns. This was promptly responded to. The regiments dashed gallantly forward, spiked the guns and returned to their cold bivouac on the frosty ground. They were not again disturbed. But that "night of horrors" must ever have been memorable to those who survived its prolonged anxieties and accumulated hardships. Counsels of retreat were made but rejected by the two Chiefs. But Sir H. Hardinge's inmost fears are disclosed by the fact that he sent orders for the destruction of all his papers at Mudki in the event of disaster.

What was now happening in the Sikh camp? Had they known it, they had won a victory. Our attack had recoiled at every point and the greatest confusion prevailed in our ranks, while there was no reserve to fall back on or bring up. They, on the other hand, had 10,000 reserve troops under Tej Singh, watching Ferozepore, who had not been engaged and could

come up at dawn. But there was no guiding mind to infuse unity into the ranks. The result was stormy counsels, bitter words, plunder and desertion, abetted by the traitors who only wanted the destruction of the Khalsa.

In the morning, when the two British Chiefs collected their remaining forces for a last desperate charge they found but a feeble resistance. They again charged and took the batteries which had been so well served with such destructive effect the day and night before. Then sweeping to the right they cleared the whole east face of the entrenchment, swung round on the north side, pivotted on the central village of Ferozeshah, and emerged triumphant on the north-west side, where the leaders were greeted by the cheers of the victorious troops. But hardly had these died away when a cloud of dust was seen approaching, out of which gleamed the arms of Tej Singh's unbeaten army. Our own men had fasted for thirty hours. Our ammunition was exhausted and some of our battalions, under the orders of an officer of the Adjutant-General's Staff who had completely lost his head, were in full retreat on Ferozepore. Apparently nothing could save us but a miracle, and that miracle happened. Tej Singh made a faint attempt to gain the Ferozeshah trenches now occupied by our troops. As bold a front as possible was shown to him, the movement of our retiring troops on Ferozepore made him anxious for his flank, and he felt himself unequal to attacking us in the very trenches we had wrested from his friends with such tremendous loss. Such were his reasons for suddenly ordering the attack to cease and hurrying with his whole force back to the Sutlej. There is a strong suspicion that both he and Lall Singh were in communication with our intelligence department and were in fact bought off. The charge is made and denied with equal show of reason. It is certain that if it happened it would be kept quiet at the time and the deaths on the spot of the two officers who would have been concerned in it leave the question not to be decided.

This remarkable battle gained after it had been lost, and gained again after its success had been imperilled, cost us 694 in killed and 1,721 wounded; on the other hand, the Sikh camp and all its munitions with some 80 guns fell into our hands. Successful as was the result, it undoubtedly shook the edifice of our own power in India to its foundation, and, more even than the disaster of Kabul, gave the impression amongst our sepoys that British arms were not invincible against bravery and numbers. The feudatory Cis-Sutlej Chiefs stood gloomily aloof, and one of them even joined the enemy.

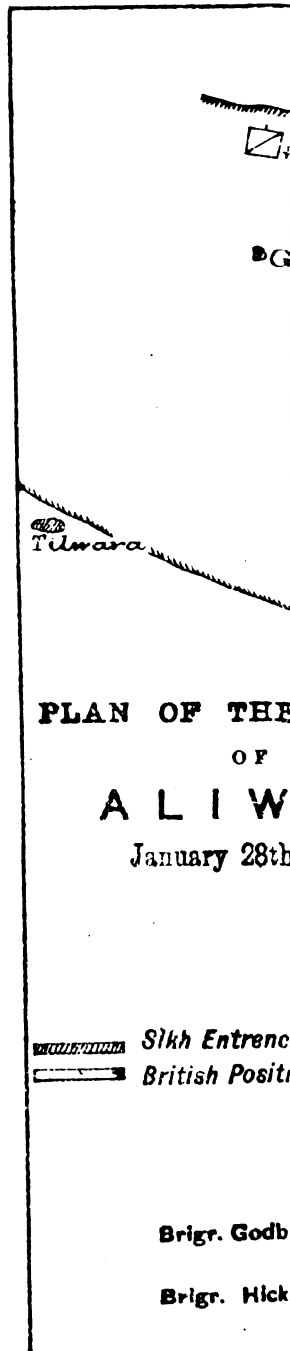
There was much discussion as to the wisdom of the attack. It was said that the army having relieved Littler, might have entrenched itself at Mudki, holding the Sikhs in check until overwhelming re-inforcements came up. It is easy to be wise [after the event. Our leaders had no idea that the opposition they would meet would be greater than that of previous adversaries whom they were accustomed to attack with a much larger disproportion of numbers. In any case it is doubtful if Ferozepore, with all its population and stores, could have been evacuated in the face of so vigorous and brave an enemy, while the impression throughout India of our sitting down under the stigma of invasion without striking a prompt and decisive blow would have been most serious.

Of the tactics of the battle there seems little to say. The line of attack was undoubtedly well chosen for the best and most decisive results. But its intention was frustrated by the failure of the left attack and the ultimate course of the battle which found us successful on the opposite flank.

The attack was made too late ; 3 P.M. on a short winter's day was not the hour to begin a desperate assault on an entrenched position, and when delivered it should have been simultaneous at all points. Havelock remarks that another $\frac{1}{2}$ hour of daylight would have made us complete masters of the enemy's entrenchments. From all accounts I am not so sure that it would not have had an opposite effect, in the state our troops are described to have been in ; and that to the panic amongst the Sikhs during the night was due our ultimate success. Our guns were, no doubt, inferior in numbers and calibre to those of the enemy, but no attempt seems to have been made to shake the Sikhs in their crowded lines before the assault was delivered. A very grave error was made by Tej Singh in allowing Littler to march out of Ferozepore and join Sir Hugh Gough without endeavouring to interpose. Had he shown any skill and enterprise he must have completely changed the course of events. But to expect this of him is to look for more military spirit than he at any time displayed.

Another most serious neglect on our side was the total want of provision for feeding the army. The men had nothing with them, and no food was distributed till the evening of the 22nd when the force had fasted for 36 hours. It was fortunate for the Quarter Master General's Department that there were no newspaper correspondents with the army.

The tide of invasion had been rolled back and not a Sikh remained on the south bank of the Sutlej. But our success had been too dearly bought for us to follow it up. It was necessary to await re-inforcements, and the army remained inactive at Ferozepore for several weeks. The Sikhs attributing our inertness to fear, recrossed the Sutlej higher up and began to threaten Ludhiana and our communications. Sir H. Smith was detached with a brigade to seize Dharmkot, a small fort commanding the line of supply, and to relieve Ludhiana. Dharmkot yielded at once, and Sir Harry, now re-inforced to 4 regiments of infantry, 3 of cavalry, and 18 guns, advanced on Ludhiana. On the 21st he found Ranjur Singh, the Sikh Commander, with 10,000 men lying across his path at Buddowal. Not wishing to fight, he hoped, by inclining to his right, to pass the Sikhs and effect his junction with the Ludhiana force. The Sikhs, however, outmanœuvred him, and drove him so much to the right that his line was enfiladed by their guns and his baggage exposed. The latter had to be abandoned, and only the boldness and activity of the cavalry under Cureton covered the force from attack till it reached Ludhiana. This unsuccessful march was no pleasant recollection for Sir H. Smith. The Sikhs were elated with plunder and even European prisoners were exhibited in Lahore. Tej Singh recrossed the Sutlej at Hariki and threw up a bridge-head in the face of the British Army. Dark rumours began to spread back into the expectant Empire. The affair was magnified into a defeat on our own territory. But Smith got his chance. On the night of the 22nd Ranjur Singh moved to a point on the Sutlej 15 miles below Ludhiana and there began a bridge-of-boats : though the reasons of his move are not very clear unless it was to meet a brigade of 4 battalions and some guns which raised his force to 15,000 men. Sir Harry at once moved out and occupied the deserted Sikh position, where he received a re-inforcement of a brigade from the main army. Having now 11,000 men he marched to give battle, and on the 28th arrived in the vicinity of the Sikh position. Here he found that they, too, were in motion, moving on Jugraon, an important point on our road to the front. The two armies met accidentally and at an angle. Both at once deployed for action, the Sikhs taking up a position with their right on the village of Boondri, their left on that of Aliwal, and, after their custom, immediately throwing up shelter trenches in their front. The lines not being truly parallel the Sikh left inclined towards and



extended beyond the British right, while the other flanks were still distant. Aliwal was seen to be the key of the position and our right was led against it. As usual a destructive fire greeted them from the Sikh artillery, but the troops on the enemy's left were levies of hillmen, not true Sikhs. They broke and fled with Ran jur Singh at their head, leaving the Sikh gunners exposed to be mowed down and the ground open for a sweeping and successful charge from our cavalry on the right. Meanwhile the Sikh regulars on the left had outflanked our line and threatened to envelope it. To ward this off the 16th Lancers were ordered to charge, supported by a Native cavalry regiment. The Sikhs met the onset with serried ranks and a withering fire, nor did they yield till their line had been three times ridden over. The charge was timely and bold, but the ground was more thickly strewn with the bodies of the victors than of the beaten infantry. All resistance was now unavailing, the Sikhs were driven across the Sutlej, and more than 50 cannon were captured. The General forgot his sorrows and the soldiers their hardships in their triumph over a worthy enemy in a well-planned and bravely fought battle.

The victory of Aliwal was opportune and had important results. I have mentioned Golab Singh, Raja of Jummo, the most powerful Sikh Feudatory and Ruler of Kashmir. He had refused for long to mix himself up in the intrigues at Lahore, but the rising prospects of the Sikhs had brought him up to see what he could gain. He now opened communications with the British and was promised that a Sikh Sovereign would be acknowledged at Lahore when order should be re-established and the army disbanded. But the army had no intention of disbanding, nor could the Chiefs attempt any such thing. They were now busy entrenching the *tête de pont* which covered their boat bridge across the Sutlej at Sobraon and were making it as strong as willing labour without expert supervision could manage. Here 30,000 men were assembled under Tej Singh, while Lall Singh watched events higher up the river with a force of 10,000 cavalry.

The works of Sobraon showed great want of unity of command and design. Each Commander strengthened his front according to his own skill and means. The centre and left, garrisoned mostly by disciplined battalions, had deep ditches and high relief. But on the right they degenerated into mere shelter trenches which the sandy nature of the soil made it difficult to shape into any formidable obstacle. In fact, although it appears that two Europeans, a Spaniard and a French-

man, were then in the employ of the Sikhs, their influence was limited to their immediate surroundings and the line showed no trace whatever of military skill or unity of design. In the works were 67 pieces of artillery, mostly on the left, and 200 zamburuks or falconets were mounted on the right front.

The English had been forced to watch the growth of these works without interruption, pending the arrival of their siege train and reserve ammunition. The first instalment of these arrived on the 7th and 8th February when Sir H. Smith and his force also returned to head-quarters, raising the available numbers to 16,000 of all arms. On the 9th the plan of operations was drawn up and it was determined to attack the next day.

The plan adopted was to make the main attack on the extreme right of the position in order to take advantage of its comparative weakness and take the guns of the front in reverse. This duty was confided to Sir R. Dick, while Gilbert in the centre and Smith on the right diverted the attention of the defenders by false attacks. Cureton with the main body of cavalry was detached to watch Lall Singh. The attack was to be preceded by fire from the massed artillery on our left, but the Commander-in-Chief would not hear of a regular bombardment or waste time in breaching operations.

Before dawn on the 10th February the army, which was assembled within striking distance, was put in motion. An advanced guard (the 62nd Foot) was detached to seize the Sikh outposts, but they were found unoccupied, and under cover of a dense morning mist the British force pushed forward and got their guns into position unobserved. At sunrise the cannonade began, the fog rolled off like a curtain and the surprised Sikhs at once heard and saw that the avenger had come upon them. Instantly they beat to arms and before many of our shots had taken effect the Khalsa artillery thundered in reply and "flash for flash returned and fire for fire."

At 9 o'clock, when but little impression had been made on the works and none on the spirit of the defenders, our scanty ammunition began to fail. At once Sir R. Dick's attack was launched under a more furious cannonade of the enemy and a slackened reply on our part. The attack was led by the 10th and 53rd British and the 43rd and 59th Native regiments supported by one horse and two field batteries, which galloped within 300 yards of the trenches and delivered their fire, while the infantry moved on and stormed the parapet at the point of the bayonet without firing a shot. The Sikhs, however,

Sikh Village

RIVER

Sir R. Dicks Division

Attack

Enemy

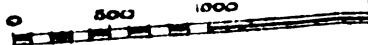
to the dunes

ITS.

works
musketry

the advance
subsequently
and Right.
adier,
engineer,
the Sutiaj,

Scale of Yards



Surveyed by { Captain Baker
Lieut. Strachey } Bengal
{ Lieut. Hodgson }

were neither surprised nor dismayed. Their right was rapidly re-inforced from the other part of the line and our men met a resistance such as they had never encountered in India before.

"In vain," says Edwardes, an eye witness, "Stacey's brigade tries to withstand the mass which is every moment growing denser. In vain Wilkinson's brigade comes up in support. In vain Ashburnham's reserve swells the tide of assault. It was like the meeting of two mighty rivers—one deeper and one swifter than the other." The crisis was noted by Sir Hugh Gough, and he at once sent orders to the 1st and 2nd divisions to press home their feint attacks. Smith and Gilbert promptly responded to the call. But before them was the strongest part of the entrenchment, and the Sikhs observing their approach at once re-manned the parapets. Grape, round shot and musketry poured forth at a distance at which every shot must tell; and each division in turn recoiled for a moment, suffering unprecedented loss. But rallying at a distance of a furlong they returned to the charge and gained the parapets in front of them. A lodgement on each of the 3 faces had now been effected, and at this moment, while the struggle was still in doubt, the cavalry under Thackwell, headed by the splendid 3rd Dragoons, broke in from the left where Dick's division was still struggling, and swept open a way which the exhausted infantry could not alone have forced. Driven from their trenches, their guns spiked and gunners sabred, the Sikhs still fought on with the bravery of despair. Many, like the brave veteran Sham Singh, refused to quit the field alive and threw themselves on our bayonets or courted death by exposing themselves where the fire was thickest. Early in the day Tej Singh had fled across the river, sinking one of the boats of the bridge by accident or design as he crossed it. The river had risen 7 inches in the night and was no longer fordable. As our eager troops captured each defensible position, the enemy was pressed towards the fatal river. Cavalry and infantry driven from three sides in a confused and disordered mass, but fighting to the last, plunged recklessly into the stream where they were mown down by hundreds under the raking shots of our guns and the volleys of the infantry, or swept away by the current.

67 Cannon, 200 zamburks, numerous standards, and vast munitions of war were left on our side of the river; and thus in little more than four hours was fought the bloodiest battle with the worthiest foe and gained the completest victory recorded in our Indian annals, and the Sikh invasion of

British India was ended in awful and disastrous tragedy. On our side out of 16,000 troops engaged 320 were killed and 3,063 wounded, of which the heaviest loss fell on Gilbert's division, which alone had 120 killed, 831 wounded. The Sikh loss is variously estimated at from 8,000 to 15,000. The latter estimate, amounting to almost half their total force, is probably exaggerated.

That very evening six regiments of Native infantry crossed the river at Ferozepore, and within a few days a treaty was signed at Kasur, half way to Lahore, by which the territory east of the Beas was annexed to our dominions, the boy Raja Dhuleep Singh was replaced on his throne, and an indemnity of $1\frac{1}{2}$ millions was exacted. In default of payment of two-thirds of this sum, and on its being found by Raja Golab Singh, that Chief was made independent ruler of Kashmir, an arrangement which subsists to this day, and further curtailed the Sikh Kingdom.

In considering the plans for the attack on Sobraon the first criticism that occurs to one's mind is that after the severe lesson of Ferozeshah it is surprising that more use was not made of our artillery, an arm in which we were at that time supposed to excel in the east. The attack was avowedly delayed to enable the siege train to come up, but it had not all arrived and was evidently short of ammunition. So much so that the Sikh artillery had not been silenced when the assault was delivered. Cunningham attributes this to the impatience of the Commanders, and both he and Havelock seem to imply that they hoped to shake the morale of the Sikh soldiers rather than silence their death-dealing guns. There can be little doubt that had the wiser but tedious course of an artillery duel been adopted, a very great saving of life to our brave soldiers might have been effected.

The arrangements for the assault itself have been generally approved. The strongest division was sent against the weakest flank with the intention of driving its blow home. Havelock, however, wrote afterwards that he felt sure if his plan had been adopted, one-third of our losses would have been saved. It embraced, he says, the project of turning the right by a bridge at Ferozepore and communicating with the turning columns higher up by means of pontoons. Such a scheme would, I think, have been extremely hazardous. It would have placed a broad unfordable river between the parts of our force; and perilously weakened our frontal attack, already no more than equal to its task.

Whether it was wise to send two whole divisions, each nearly 5,000 strong, to make feint attacks is, I think, open to discussion especially as there remained no central reserve under the hand of the Commander-in-Chief. Moreover, the feint attacks appear to have been so faint or so late that the opponents of the real attack were largely re-inforced, and only when our 1st and 2nd divisions pushed their attack home was the pressure relieved.

The battle of Sobraon, though in fact it terminated the war and threw the fate of the Sikh nation into the hands of the British, must be looked upon as a decisive battle, not alone, but as the complement of that of Ferozeshah. The first was the battle in which the success of our arms trembled in the balance. What victory to the Sikhs, and victory was twice well within their grasp, would have meant to us it is not now possible to say. With the Governor-General and Commander-in-Chief captured or killed, the army dispersed, and Delhi open to sack and pillage, we should have required to put forth the last resources of the Empire to re-establish our position. But the Sikhs beaten at Ferozeshah had really lost the game. We had shaken their morale, discredited their leaders, and given time for our superior but scattered forces to assemble. A repulse at Sobraon would have left the British army in a position to renew the attack.

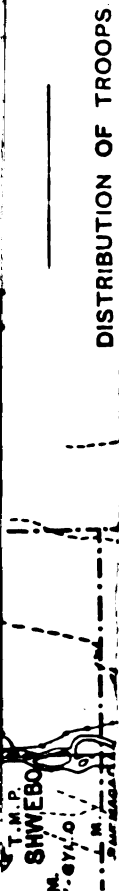
In considering the campaign as a whole, the points worthy of notice on the side of the Sikhs seem to be the stubborn bravery of the rank-and-file, so different to anything we had experienced before in a pitched battle in the East, the soldierly spirit with which they submitted in the face of an enemy to be commanded by Chiefs whom they knew to be incompetent or worse, after the lawless anarchy that had before prevailed amongst them, and the peculiar aptitude they showed for entrenching themselves behind earthworks, a system they certainly did not learn from us and in which they anticipated the achievements of the Turkish army to whom one is constantly mentally comparing them.

On our side I would venture to suggest that the place of the Governor-General and Commander-in-Chief was not with the advance guard of the army or in the fore-front of the battle, any more than it was the place of their staffs to lead regiments into action and capture batteries. It was thus that Major Broadfoot lost his life at Ferozeshah when he, the Political Officer of the frontier whose brain was worth ten times the value of his sword, was doing the work and usurping the place of a regimental officer.

The lessons taught in this campaign as to the use of artillery fire have already been touched on. But they did not at once have their effect on the impetuous Gough as is shown by his conduct of the next campaign.

In fact, I think we may sum up our consideration of the 1st Sikh War by saying that as in so many of our previous eastern campaigns, pluck and discipline seem to have won us the day without any very great skill or science in high places, and the admirable quality of not knowing when we are beaten, carried us through and snatched victory from the jaws of defeat at Ferozeshah and Sobraon as it had done at Waterloo.

Distribution Map



Ladlan

Ferosap

Ambell

Simla

Meeru

Troops engaged at Alwal, 28th January 1846.

UNDER SIR H. SMITH.

Artillery	.. 22 guns, Royal Horse Artillery ...	6 guns, Royal Artillery 2 Howitzers ...	Total	30	
Cavalry	{ 1st Brigade, McDowell	{ 16th Lancers	{ ... }	1,300	3,038	
		{ 3rd Light Cavalry	...	...		
		{ 2nd Brigade, Stedman	{ 4th Irregulars	{ ... }		1,107
			{ Body Guard			
			{ 1st Light Cavalry			
		{ 5th Light Cavalry	{ ... }	631		
		Shekawatti Cavalry	...	...		
Infantry	{ 1st Brigade, Hicks	{ 31st Foot	{ ... }	1,596	7,175	
		{ 24th Native Infantry	...	...		
		{ 36th Native Infantry	...	...		
	{ 2nd Brigade, Wheeler	{ 50th Foot	{ ... }	2,132		
		{ 48th Native Infantry	...	...		
		{ Sirmoor Gurkhas	...	...		
	{ 3rd Brigade, Wilson	{ 53rd Foot	{ ... }	2,148		
		{ 30th Native Infantry	...	...		
		{ Shekawatti Battalion	...	...		
	{ 4th Brigade, Godby	{ 47th Native Infantry	{ ... }	1,599		
		{ Nusseroe Gurkhas	...	...		

DISCUSSION.

The Hon'ble Major-General Sir Edwin Collen said :—

LADIES AND GENTLEMEN,—

I am exceedingly glad to have had the pleasure of presiding at this lecture to-day and for several reasons. In the first place, I think we must all welcome most heartily any contribution to military history founded on study, for every one here will, I imagine, agree that the study of military history is absolutely necessary for those who are soldiers, and that there is no study so calculated to improve a man in the military profession. Secondly, I think we must all acknowledge that a study of Indian Military History is especially valuable, but that it is somewhat neglected. And, lastly, it is of the greatest advantage to have in a compact form a narrative of the First Sikh War, because we know the country, and such an account enables us to appreciate the foes with whom we had to contend—foes who have since become our firmest friends, and with whom we have fought shoulder to shoulder in many a campaign.

I do not intend to trouble you with any detailed remarks on the lecture to which we have just listened. Colonel Sinclair has placed the subject before us in a very clear and practical way, and I venture to think his conclusions are in the main most reasonable. He paid a well-deserved tribute to the stubborn gallantry of the British troops and the devoted bravery of their opponents; but I do not think he alluded to the admirable way our Hindustani troops fought at Aliwal and Sobraon, and perhaps he has hardly done sufficient justice to that fiery old warrior, Lord Gough.

Since those days our enemies have become our best soldiers, and the stalwart defenders of the entrenchments of Sobraon have had worthy descendants in the defenders of the blood-stained fort of Saraghari. Men like them and their brethren have indeed no cause to be ashamed when they stand with their enemies in the gate. No one who has ever served with Sikh troops can speak too highly of them; and as we listened to the account we have just heard, while we must recognise that they were indeed foemen worthy of our steel, we know now that the Queen has no more brave and devoted soldiers than those who belong to the great religious and military community of Sikhs.

We are much indebted to Colonel Sinclair for his labour on this subject and for permitting us to enjoy the fruits of that labour, and I will ask you to allow me to convey to him our cordial thanks.

Colonel Sinclair rose to express his thanks to Sir E. Collen for so kindly presiding at his lecture and to the audience for their appreciative and wakeful reception of it. In thanking Sir Edwin for his speech, he might perhaps be allowed to remark, with regard to his criticism on what he (Colonel Sinclair) had said, or rather omitted to say as to the behaviour of our native troops, that he had no intention

of disparaging their bravery or discipline at Aliwal and Sobraon. He had mentioned that the attack on the Sikh works at the latter battle was led by two British and two native regiments, and that those regiments charged together over the ramparts and captured the parapet without firing a shot and at the point of the bayonet. He ventured to think that such an achievement hardly needed any words on his part to accentuate its splendid valour, and he felt sure that native troops, of whatever race or country, when led by British officers and supported by British comrades, would never fail them in courage or devotion.

FROM THE PUNJAB FRONTIERS TO UGANDA.

BY LIEUTENANT E. G. VAUGHAN, DEPUTY ASSISTANT COMMISSARY-GENERAL.

Uganda has been so much before the Indian public of late in consequence of the newly-formed Indian Contingent for service in that country, and the host of applications received from officers for service there, that some account of the country as it is and of the conditions of service in East Africa in 1898 may, I think, be of interest to my brother-officers in India. Anyhow I myself would have been saved a good deal of trouble and expense if I had been aware of the facts I am now about to relate.

The rush to join the Malakand Field Force, thence to Shabkadr for the Mohmand Field Force; after that the tedious wait, suppressed excitement, and hopes deferred of the Reserve Brigade, Tirah Expeditionary Force; and then at a few hours' notice to join at Mardan the Buner Field Force: all these put one into fine training for any emergency or service anywhere; but when a fifth urgent wire ordered me to Mombassa for service in East Africa, I felt I was peculiarly fortunate.

The middle of February last, therefore, found me at Bombay where, however, a delay occurred pending some reference to authorities at home; which delay was all the more annoying, as Bombay in February with only field service kit—and that mostly in rags and tatters—is not exactly comfortable. However, I occupied myself in reading books on Africa, buying some new kit, and studying the plague and riots. I could obtain practically no information from Army Agents, Banks, and other Firms regarding Mombassa and East Africa. The journey from Bombay, as it turned out, by a very inferior class of steamer, took eleven days; but if I had been going an eleven months' cruise to remote islands difficult to arrive at somewhere in the Arctic circle, I really believe I could hardly have been furnished with less information.

To begin with, the Pay Department could not tell me how my pay in those parts was to be drawn; but, to cover themselves, treated my move to Africa as an ordinary move from

one cantonment in India to another, and promptly deducted three months' officiating allowance that I had drawn previously, for want of some certificate I was unable at the time to furnish.

Then, one of my Insurance Policies I discovered lapsed or was forfeited by my transfer to Africa; and no office, out of several, to which I applied in Bombay, would grant me a Policy to cover residence and war risks in that country.

Moreover, in spite of advertizing in the Bombay papers, for a long time I was unable to obtain a servant to go with me, although I offered three times the wages of India plus free rations.

The less said about the individual I eventually obtained a day or two before sailing the better.

However, I at last got my final orders and started by the first steamer—a British India cattle-boat.

I here give away a valuable "tip"—Officers appointed *from England* to join the newly-formed corps of Uganda Rifles in Africa are granted an outfit allowance of one hundred pounds sterling. It may be the same for officers sent from home for other appointments here. *Autres pays autres mœurs.*

The entrance to Mombassa harbour is apparently difficult to approach. One steamer was ashore at the mouth of the channel, and close by was a large native craft, more or less a complete wreck. The town is not prepossessing. The streets are narrow little alleys and the main road is taken up by a trolley-line, it being the custom to go about as much as possible on little four-wheel trollies pushed from behind by Swaheli boys. The absence of carts and of all animals, except occasionally a donkey or two, is noticeable.

The impression first conveyed to the stranger on setting foot on African soil is that nobody knows anything about him and cares a great deal less.

There are no hotels to go to, but there is a proprietary club which has two rooms only for resident members. By the kindness of Major Hatch, the Officer Commanding Troops at Mombassa, who gave me a note to the steward of the club, I was able to put up there for the night, one of the rooms having just been vacated. Otherwise I would have had to pitch my tent at once on landing. Clubs in Africa, like almost all other things here, being luxuries, one has to be prepared to pay accordingly. In the evening the place was filled by all sorts and conditions of men from all parts of the world. Most of these were waiting for transport arrangements to be

completed by the authorities for them to proceed to take up appointments in Uganda. The transport arrangements are in charge of the Uganda Transport Department, the Director of which is Dr. Mackinnon. Officers proceeding to Uganda are supplied with a green, rot-proof canvas tent and certain articles of camp furniture, etc., on requisition, which remain the property of Government. The only Bank that has a branch at Mombassa is that of the National Bank of India.

A good many officers for the newly-formed corps of Uganda Rifles were at Mombassa on my arrival. Each company has nominally a captain, subaltern, and two British non-commissioned officers. The last are paid one hundred and fifty pounds sterling a year. The officers in a similar ratio. The men are Swahelis and appear of poor physique, and it is doubtful whether they will ever make good fighting material. Their uniform is a kind of brown khaki jersey, with leather shoulder-pads, knickers, and putties. This workman-like appearance is spoilt by a fatigue-cap of black and red cloth.

There are two or three large firms in Mombassa that do a roaring trade in European stores—a most important item, as the country produces nothing for Europeans, and those going to Uganda must take a year's supply of stores with them. For the transport of these, one is allowed sixteen loads free and also an additional eighteen for camp equipment, etc. Loads should in no case exceed sixty pounds gross weight, as this is the maximum a native porter will carry. Also soft 'bag' loads are greatly preferred by them to boxes. The latter must be as small and compact as possible so as to be easily carried on the head. Officers proceeding to Uganda are also supposed to be supplied with an interpreter, cook, and tent-boy for the journey at Government expense ; but these are not always to be obtained at Mombassa, and in my case I could not wait, and started without them. While up-country private arrangements must be made for further supplies, etc., required, the administration only undertaking to refund to officers, on the production of the necessary vouchers, transport expenditure incurred by them up to a maximum of sixteen loads per annum. All *bonâ fide* personal kit, together with one rifle, one gun, one revolver, and a maximum total of 300 rounds of ammunition per officer, are admitted duty free. Any provisions introduced from outside Mombassa must pay duty ; but even then I think it will be found more economical than purchasing them in Mombassa where prices are very high. The Commissioner and Consul-General for the East African

Protectorate is Sir Arthur Hardinge, K.C.M.G., with his headquarters at Zanzibar. Mr. E. J. L. Berkeley, C.B., holds a similar appointment for Uganda with his quarters at Kampala. The whole distance from Mombassa to Kampala in Uganda is about 800 miles. Of this about 150 miles is now covered by the Uganda Railway—a narrow-gauge line, being slowly laid, and of which it is confidently anticipated the cost by the time it reaches Uganda will have exceeded four times the original estimate. The work of laying it down is being carried out by Indian coolies, local labour as represented by the lazy Swahelis not being procurable in sufficient quantity.

Though the line was nominally open for passenger traffic as far as Voi—100 miles—at the time I passed through, the trains were not running with much regularity and breaks-down were frequent. One of the great difficulties to contend with is that of the water-supply which has to be carried in tanks, none being obtainable except at long intervals. I left Mombassa, or rather Kilindini where the railway starts from and which is about 2 miles from Mombassa harbour, in the guard's van of a goods train that was taking up rails and sleepers, etc.; and after delays of some days at Ndi and Voi (where I had to pitch my tent alongside the rails, while an engine in front of us that had got off the rail was being got back), I eventually reached the rail-head at Mtoto Ndi only by travelling in a coal-truck and then on the engine itself.

I was amused by the remark of a gallant engineer with whom I was conversing at one of the 'stations' *en route*—a few huts and a corrugated-iron water tank. I asked him, as so many Indians are employed, whether he spoke Hindustani; "no," said he, as he flourished aloft a strip of rhinoceros' hide which he held in his hand, "I have half-a-dozen different races under me, but I have an article here that speaks all languages!"

A great scare was existing along the line on account of the depredations of a man-eating lion. This brute had carried off and killed a very large number of coolies at night between the rail-head and Tsavo. Although parties had repeatedly waited up for him and large rewards were offered for his death, he had succeeded in escaping and continued to claim more victims. Every little way-side 'station' had its *boma* or circular enclosure of brushwood and trees, cut down and strongly barricaded, outside which no one ventured after dark,

and within which a large fire at night was always kept burning.

I saw one Indian cooly in a train going back to Mombassa, who had been seized by this lion at night. It had leapt the *boma* and seized his arm, but had been frightened by the shouts of his companions and vanished back again into the darkness. His arm was badly damaged, but he was holding forth bravely to a small circle of admirers on his recent exploit.

From the rail-head the journey is usually performed by loads being taken on donkeys. These are in charge of a contractor who employs Swaheli 'boys' to drive them, and the distance travelled daily depends on where the next water can be obtained.

Rinderpest is very prevalent and has killed all the bullocks of the Uganda Transport Department; while the tsetze-fly poisons the mules and other animals. Donkeys appear to be the only animals that have a chance of surviving; but it is a question whether, with a properly organized system of transport, certain animals being only employed in certain localities, depôts for grain and simple veterinary medicines at fixed stages, responsible men in charge and careful supervision, etc., etc., the heavy losses in transport animals that now occur could not be considerably reduced.

On account of these heavy losses of animals, travellers to Uganda have to invariably wait weeks and sometimes months at posts *en route*, where stores for the troops also accumulate and go bad, thus causing further losses to the State. The natives of the country are lazy, idle, and very independent; and this being a 'Protectorate,' no coercion of the slightest kind is ever employed in inducing them to come in as porters to carry loads. Moreover, the rupee has no charm here; the only currency being beads, brass-wire, and cloth, of which the traveller is recommended to bring a good supply. The telegraph-wire is not yet laid to Uganda and the post—a native runner—only goes twice a month and cannot always be depended upon.

The journey from the rail-head—Mtoto Ndi—to Kikuyu, which is the first post of importance, about 360 miles from Mombassa, takes about twelve days. The daily marches vary from 10 to 20 miles. At some seasons double marches have to be made as no water is procurable; and at places it consists of only a dirty pool which had best be avoided if possible. At

times it has to be dug for in the bed of a nullah or other spot.

Game is, however, plentiful at nearly every halting-place and *en route* Guinea-fowl, various kinds of deer, hartebeeste, zebra, rhinoceros, ostrich, elephant, etc., may all be met with, as also lion between the rail-head and Uganda. I have shot a curious kind of 'spur-fowl' at Kikuyu which is good eating, and also bustard, partridge, and quail further up. The principal kinds of deer met with are the *Gazella Granti*, Bushbuck, Impala, and *Gazella Thomsoni*, four kinds of hartebeeste, and there are also wildebeeste.

The country up to Kikuyu is for the most part open, being a succession of vast plains. At one part the road goes over old lava-beds, and a long march of 19 miles to the post before Kikuyu was, at the beginning of June, nothing but bog.

The most popular rifles over here for shooting are the 'Mäuser,' 'Mannlicher,' and '303.' Personally I have found Jeffrey's '303 split bullets with cordite very unreliable, and others over here tell me the same. The soft-nosed copper-tipped '303 bullet is far more trustworthy. I have no personal experience of the other two rifles mentioned, but they have each strong advocates. A plentiful supply of ammunition, Rangoon oil, etc., should always be brought.

As a contrast to the plentiful shooting *en route* to Kikuyu, there is none to speak of at or near the post itself. A few 'spur-fowl,' already referred to, can be obtained by shooting over the "Shambas" or Indian-corn plantations near the villages. The natives of these parts belong to the two tribes of 'Wa-kikuyu' and 'Masai.' The last named are the most typical-looking savages one can imagine. They wear little clothing, and anoint half the body with some horrible slimy yellow clay, and carry long iron spears or bows and arrows with oval-shaped shields made of rhinoceros' hide.

The women appear to do all the work of working in the fields and bringing round a few vegetables to sell. These tribes resemble in a good many ways the Chins of the Chin Hills in Upper Burma.

The journey from Kikuyu onwards is usually by caravan of porters whenever these can be induced to come in. The natives around and near Kikuyu are more or less under the control of the district officer (a retired missionary), but 20 miles away they are entirely out of hand, and it was a tribe from that neighbourhood that attacked and killed

the late Veterinary-Captain Haslam, Army Veterinary Department, with bows and arrows. A day or two previously I had accompanied him part of the way back to his camp, and I believe I was the last man from the Kikuyu post that had seen him alive.

He was over here on special duty investigating the rinderpest.

Caravans march in single file, a man with a drum leading, on which he beats a monotonous series of taps that help to make the men step out.

Twenty-four miles on, the Lower Kedong River is crossed and the Uganda Protectorate entered. The first post here is Naivasha, situated on the border of the large fresh-water lake of that name. There are plenty of fowl on this lake, and *en route* to the post elephant, ostrich, zebra, and deer, etc. Country woody and rather enclosed. The next post is the Eldoma Ravine, some 80 miles further on. On the way one passes two salt lakes, which, to the thirsty traveller in a land where water is scarce, are most tantalizing and aggravating. We camped close to the edge of one of these lakes after a long and hot day's march and could obtain no fresh water anywhere. Luckily it had recently rained, and in going after a herd of zebra soon after our arrival, while my tent was being pitched, I had the good fortune to come across a puddle of rain water, about a mile from the camp, from which my Pathan orderly and I enjoyed a long drink with the greatest satisfaction before conveying the joyful intelligence to the remainder of the caravan.

I would advise no one to stray far from the road or camp while on the march in pursuit of game without a guide who knows the locality.

The memory of a long day lost in the jungle when after hartebeeste, and without water for something like ten hours—we started at 6 A.M. and did not return until 10-30 P.M.—will never fade from my mind.

At some of the halting-places wood is scarce, and so fires cannot be lighted without bringing on material from the last stage or collecting it *en route*. One of the most unpleasant experiences is crossing a raging torrent up to your knees in water, or even higher, while the rain pours down in streams overhead; and then having to wait for an hour or so on the bank the other side while your loads and most cherished possessions are brought over dripping, one by one, and deposited at your feet; you being at the time a good 10 miles

or so from the camping-ground for the night. The spirit of a Mark Tapley is on these occasions to be prayed for.

After leaving Kikuyu, you gradually ascend until at the Eldoma Ravine you are some 8,000 feet above sea level. There is no shooting to be obtained within some 15 miles of this post, there being nothing but tall thick grass everywhere into which the deer and zebra, etc., will not penetrate. The country is wooded and game beyond this point is scarce. Another ten days' journey brings one to Mamias, the capital of the Kavirondo District, and twelve to fourteen days further on Kampala, the capital of Uganda, is arrived at. Except around Kikuyu, few villages are ever seen or come across. The tribes have hundreds of cattle, sheep, and goats which you may meet or see grazing in the distance, but these they will not sell for any price. Thus you may starve for meat in the midst of plenty. I would advise a flock of sheep being taken with him by the tourist from Mombassa, and also a supply of fowls. Food is so scarce that it is all taken along by the porters of the caravan, who only get $1\frac{1}{2}$ lbs. of black 'Matama' flour as their ration per diem. There is consequently great rejoicing in camp when after a successful day's shooting on the march you are able to distribute meat all round. A pony or two for riding is very much appreciated, if it has survived the attacks of the tsetze-fly and the notorious African "horse-sickness." So many valuable animals have been lost here, however, from these causes that I hesitate to recommend their being brought over. An extra tent-covering is required to shelter them from the very heavy dew at night and frequent rain; and grain, etc., will have to be carried, as none can be procured on the road.

A Pasteur Camp-Filter I was recommended to invest in I have found useless. After a good hour's hard pumping a small cupful of water was all that could be produced, and the India-rubber tubing invariably splits or rots away. The Berkenfeldt Camp-Filter is, I believe, considered the better of the two. The green rot-proof canvas for tents and ground sheets is in universal use here, and seems not only to resist rain and damp well, but to be far superior in quality to the white and khaki-colored tents manufactured in India. The color is, moreover, less conspicuous and more restful to the eye; and the cloth resists the depredations of white-ants, etc. I feel confident if these tents had been in universal use in India during the late frontier campaigns, the casualty list from 'sniping' would have been considerably reduced.

A few last 'tips.' A plentiful supply of medicines is necessary. "Iodoform" is useful for sores which are quickly caused here from the prick of a thorn or the rub of a boot, and take months very often to cure. This stuff is also in great request by the natives who suffer a great deal from their feet, and they will sometimes even part with a sheep or goat for a teaspoonful or so.

Quinine, zinc ointment, boric-acid powder, vaseline, etc., will all be found useful ; as also several pairs of strong boots and a plentiful supply of warm clothing, waterproof-sheets, etc. It should be borne in mind that after leaving Mombassa nothing can be obtained at posts *en route* or at 'stations' on the line even. A few vegetables are to be had from the natives at Kikuyu—chiefly sweet potatoes—and also at Mamias and Kampala. Beyond this nothing can be counted upon, and reliance must be placed on the rifle and gun. If the traveller can afford it, I would recommend his buying private transport donkeys at Mombassa to bring up with him additional stores. These animals can be readily sold to private transport contractors on the road for rupees fifty and more. They require no grain ration, as grazing is plentiful, and a few Swaheli boys can be engaged to drive them at Mombassa.

THIRD BURMESE WAR.

LECTURE BY MAJOR A. KEENE, D.S.O., ROYAL ARTILLERY.

Monday, the 12th September 1898.

HIS EXCELLENCY SIR CHARLES NAIRNE, K.C.B., IN THE CHAIR.

In 1853, at the end of the Second Burmese War, we found ourselves in possession of the Province of Pegu in addition to those of Arakan and Tenasserim, which had been ceded at the end of the First War. Our boundary to the north of Pegu was defined by a row of pillars running along the parallel of $19^{\circ} 30'$ N. Latitude. The Burmese erected a fort at Minhla on the Irrawady, north of the said line, while we made one at Thyetmyo, south of the same. At the eastern extremity we also built a fort at Tonghoo, and both that place and Thyetmyo were held by fairly strong garrisons, with a proportion of British troops. Mindohn Min, King at that time, was the best of all the Burmese rulers with whom we were brought in contact. He accepted the position and made the best of it. He received our residents at his Court, which was moved to Mandalay in 1860, and treated them well; aggression was discouraged where our frontiers came in contact, missionaries settled in Mandalay, and trade flourished. With that delightful freedom from bigotry, which is so charming among the Burmese, the King, though most zealous in the exercise of his own religion, built a church for the missionaries in Mandalay, and actually sent some of his younger sons to the school kept by them. Shway Yoe, in his entertaining book, relates how when Dr. Marks, the eminent S. P. G. missionary, came to Mandalay and established a school, Mindohn Min asked him what was the best age for a Burman to commence learning English: "About twelve years old" said the reverend gentleman. The King at once called for "all his sons that were twelve years old or thereabouts." Eleven were produced, and among them was Thibaw, who at that time was of absolutely no consequence. Old Mindohn Min was very much married and had some thirty sons older than Thibaw.

As trade developed, steamers began to ply on the river, and in 1867 we find the Irrawady Flotilla Company's fleet in full work.

In 1879 the old King died, and by a palace intrigue Thibaw was placed on the throne. The Princes of the blood were summoned by a forged royal order to come to the palace to bid farewell to their dying monarch ; all but two attended. As they came up to the throne-room, they were seized and made prisoners. Worked on by his wicked wife Soopyalat and her designing mother, Thibaw at last consented to a massacre of no less than seventy of his blood relations. A vigorous protest was addressed to him by the British Government, which only irritated the weak King and intensified his dislike to us. The terrible massacres, however, filled him with remorse and to drown the recollection he took to drink and other excesses. Everything was mismanaged ; still money had somehow to be found. Thibaw took to selling monopolies and giving grants of forest land for hard cash payments. The buyers of these monopolies, haunted by a fear of the instability of the King's rule, hastened to make as much money as they possibly could in a short time and paid absurdly low prices for produce. The cultivator gave up farming or working in the forests, and trade was seriously affected. Thibaw, however, continued his wild career, and finally, owing to his outrageous conduct, the Indian Government withdrew the whole personnel of their Residency. This encouraged the French to renew their intrigues at the Burmese Court, and at one time they were gaining an alarming ascendancy there. But luckily for us there was in Mandalay an Italian Consul of the name of Andreino, who kept our Government informed of what was going on. The most ardent partisan of peace will admit that we could not allow any foreign power to supersede us in Upper Burma. Finding then that Thibaw remained deaf to all threats and remonstrances, the Indian Government finally launched an expedition against Mandalay.

The force designed to coerce Thibaw sailed from India in November 1885, and, as in former wars, the troops started from Calcutta and Madras. General Prendergast was in chief command of the expedition with Generals White, Foord and Norman as Brigadiers. Colonel Sladen accompanied them as Chief Political Officer.

Orders for the despatch of the force were issued on 21st October 1885: ten days after transports had been hired,

troops railed down to Calcutta, commissariat, medical, and other arrangements completed, and by the 2nd November the force was on its way to Rangoon. There, too, every one had been busy, and a fleet of twenty-four river steamers, belonging to the Irrawady Flotilla Company, was ready for the troops. These steamers are fine, powerful paddle-boats, and with capacious flats, lashed one on each side, they made excellent transports. On the 7th November the fleet started up the river for Thyetmyo, our frontier station on the Irrawady. By the 16th most of the steamers had reached that station, and General Prendergast found himself on the borders of the country he was to invade with a compact little force constituted as follows:—

1st Brigade ...	{ 8th King's or Liverpool Regiment. 21st Madras Infantry. 25th " " "
2nd Brigade ...	{ Hampshire Regiment. 1st Madras Pioneers. 12th " Infantry. 23rd " " "
3rd Brigade ...	{ Royal Welsh Fusiliers. 2nd Bengal Infantry. 11th " " "
9-1 Cinque Ports British "Mountain" Battery, with their mules.	
Hazara Mountain Battery	
No. 5 Bombay Mountain Battery ...	} without mules.
Six companies, Sappers and Miners.	

At the head of the fleet were the Naval Brigade in the gun-boats *Irrawady* and *Kathleen*. Then came some steamers with barges which had been prepared to receive heavy guns. The transports followed, and finally the hospital and commissariat steamers. The whole line of ships was over four miles long, but the Naval Brigade, guided by excellent river pilots, buoyed the channels as they went along, and the other vessels followed without much difficulty. On the roof of every steamer Colonel Begbie, of Signalling Lamp celebrity established a signalling station, and orders were thus communicated.

The celerity of our movements took the Burmans somewhat by surprise, but two Italians at the Court of Mandalay—Comotto and Molinari by name—volunteered to go down the river and obstruct the channels. The fort at Minhla was held by a strong garrison, and other formidable works had been made on the bank opposite at a place called Gwé-Gyang-Kamyo. General Prendergast resolved to attack these works simultaneously on the 17th. The

Naval Brigade and gun barges shelled the fort at Gwé-Gyang-Kamyó from the river, while the 1st Brigade landed and made a détour from the land side. The shells from the steamers drove the Burman soldiers off the walls, and into their casemated barracks, so that when our troops arrived on the land side, on ground that commanded the fort, they had it at their mercy. By 1 P.M. the place was in our hands, and the General and his troops could watch from the left bank the operations of our native regiments who were still attacking Minhla. These had landed at Malun, three miles south of Minhla fort, and marching through heavy jungle were suddenly fired on by some Burman soldiers who were established behind a stockade. After a short delay the position was taken and our men pushed on. Owing to the jungle it was difficult to ensure concerted action, but finally the fort was carried by a rush of some thirty men, 12th Madras Infantry, and ten or twelve of the 11th Bengal Infantry. The officers present with this party were Lieutenant-Colonel Simpson and Lieutenant Wilkinson, 12th Madras Infantry, Lieutenant Downes, Adjutant, 11th Bengal Infantry, and Major Hill, Director of Transport. They managed to reach a ramp leading to the fort walls. Lieutenants Downes and Wilkinson, young and active men, were the first to arrive at the top. The latter slipped, fell, and was cut in five places by the daks of the Burmans, but the rush of our men saved his life. When we gained the walls the fort was practically ours. The Burmese troops dashed wildly about the interior of the work exposed to the fire of our people on the walls. Some ran and took refuge in the barracks, others fled out at the gate on the river face. But the 2nd Bengal Infantry had by this time worked round, and deploying on the river bank swept its face with their fire and killed many of the fugitives. Our loss in this affair was one officer and three men killed, twenty-seven wounded. Of the Burmans, 170 were killed and buried by our people, about 40 were wounded and 276 made prisoners. The British troops had been landed on the left bank where the hardest fighting had been expected, leaving native troops only for the assault of Minhla.

One company, Liverpool Regiment, two companies, 2nd Bengal Infantry, and two guns, No. 5 Bombay Mountain Battery, were left to keep possession of the forts, and the fleet steamed on next day up the river.

On the 22nd November the fleet reached Pagan where we landed—

Two companies, Liverpool Regiment.

Four „ 11th Bengal Infantry.

Two guns, No. 5 Bombay Mountain Battery.

One company, Sappers.

On the 24th the leading ships were fired on from the river bank at Myingyan and from guns placed in the dry bed of a nullah that here runs into the river. The gun-boats and barges were at once brought into action and shells—machine gun and rifle fire—were showered on the banks. The enemy were soon driven into the long grass or under cover. A body of Burmans, some 2,000 strong, dressed in red, white and magenta coats, with chiefs under gold umbrellas, was observed collected on rising ground, about three miles inland. Firing went on till late at night, and orders were issued for the troops to land next morning, but by that time the Burmans, cowed by our artillery fire, had dispersed.

Here again troops were landed, *vis.* :—

Two companies, Liverpool Regiment.

Four „ 11th Bengal Infantry.

Two guns, No. 5 Bombay Mountain Battery.

One company, Bombay Sappers.

On the 25th November our fleet arrived off Yandabu and anchored opposite the historical tree where the treaty of Yandabu was signed in 1826. On the following day the Naval Brigade captured a steamer belonging to the Burmese. She had been built by the Irrawady Flotilla Company and sold to the King for 2½ lakhs of rupees. A few blue jackets were sent on board to take possession, Colonel Sladen, Chief Political Officer, accompanying them. This ship is still running on the Irrawady, under the name of the *Sladen*. On the 27th the fleet arrived near Ava. Large bodies of Burmese troops, computed at 8,000 men, were in the neighbourhood and near Sagain on the opposite bank. Great preparations had been made for landing and assaulting the forts of Ava and Sagain, but Burmese envoys shortly came off, bringing a telegram from the Council of Mandalay, which contained orders not to resist the British in any way. General Prendergast now insisted that the Burmese troops should be disarmed, and after some demur this was agreed to. The Royal Welsh Fusiliers landed, and about 600 Burmese filed past, laid down their arms, and to their great

delight were allowed to go off to their homes. Unfortunately the rest of the army, hearing they were not to fight, had dispersed, taking their arms with them. Only 546 muskets and 87 breech-loaders were handed in—probably between 4,000 and 5,000 were still left in the hands of the enemy. General Prendergast has been severely criticised for letting so many get off with their arms, but we must remember that he had at Ava a most delicate task to perform. Had he been in a hurry to land troops, he would have brought on an action, many lives would have been lost, and probably none of the Burmese soldiers would have waited to be disarmed.

On the 28th at 10 A.M. our force arrived at the capital. At 1-30 our troops landed, marched up to the fort, two miles from the river, disarmed the guards at the gates, and entered the native city. The fort of Mandalay is a large enclosure, nearly square, each face being about $1\frac{1}{4}$ miles in length. Outside the walls runs a deep moat, 70 yards wide. This moat is crossed by six bridges: opposite each is a gate. The walls are about 20 feet high and are backed with an earthen rampart, 24 feet thick. In the centre of this fort stood the palace buildings protected by a palisade of teak timbers, 16 feet high. Beyond the palisade and within the outer walls lay the native city. Colonel Sladen, who knew Mandalay well, having been resident there, now approached the eastern gate of the palace enclosure, where he was met by the Burmese Prime Minister. They entered the palace together and had an audience with the King. Thibaw having surrendered unconditionally, Colonel Sladen returned and told General Prendergast the result of his interview. The Hampshire Regiment posted guards and sentries round the palace, and the rest of the troops withdrew to the steamers. Colonel Sladen himself passed the night in the Hlut-daw or Council chamber just outside the palace. Early in the morning came an urgent message from Thibaw. The hapless King was in a great fright. Crowds of women of the lower orders had penetrated to the royal apartments and had begun to loot them. This was due to a misunderstanding. Colonel Sladen had requested that the palace women should be allowed to go freely in and out at the west gate where the Queen's apartments were. Taking advantage of this order, all sorts of women from the native city entered the palace and looted as they pleased. Thibaw, in terror of his own subjects, now consented to go with Colonel Sladen to a summer house in the palace gardens. The same afternoon he and a small following were removed in

carts to the river and placed on board the Irrawady Flotilla Company's steamer *Thooreah*. A guard of two companies, Liverpool Regiment, under Colonel LeMesurier, was detailed as his escort, and the next morning the *Thooreah* started for Rangoon. From Rangoon Thibaw was deported to Madras and thence to Ratnagiri on the west coast where he has been kept ever since. Thus ignominiously fell the Burman Empire, which, for more than a thousand years, had held sway over the middle regions of the rich valley of the Irrawady.

General Prendergast now occupied the fort of Mandalay with his troops. The head-quarters and staff were billeted in and about the palace itself, the men in monasteries and other buildings. The steamers of the Irrawady Flotilla Company had enabled us to penetrate into the heart of the country, the line of the river was held by the detachments that had been dropped at the various places as our fleet advanced, and our communications were thus secured. Our grip on the country was as strong as that of an octopus on its victim, and there was little chance of the Burmans ever being able to make us let go our hold.

But our work was only beginning now. By the 20th December the General found that he must send a column up to Bhamo; then another had to be despatched up the Chindwin river; next a third column was required to work the country between the Irrawady and Chindwin. The first two columns moved by river, the third by river as far as Shemaga, whence they took a semi-circular route through Shwébo, rejoining the Irrawady at Kyaukmaung. The transport of this column consisted of 70 ponies and 336 coolies. In addition, 150 coolies were required to carry the two guns. The chief developments in the action of the war about this time were as follows:—

The work of the Naval Brigade and the gunners on the barges was over and they were allowed to return—the former to their ships, the latter to India. In a farewell order to the Naval Brigade the General wrote: "The Naval Brigade has shown gallantry in action, readiness of resource, cheerfulness in the performance of duty, and exemplary discipline."

The sailors had, however, to be sent for again, as later on the dacoits took to piracy on the river, and small steam launches were employed, with a few blue jackets, to patrol the Irrawady. There was a story current at this time to the effect that a general officer, who was going down the river on a tour of inspection, boarded one of these launches in the

month of August and asked the men how they were getting on: "We're all right Sir," said an honest tar, "but the man next the boiler finds it a trifle relaxing."

No mounted troops had come with the expedition originally, but the 2nd Madras Light Cavalry arrived in the beginning of December. On the 23rd November we first hear of the Mounted Infantry who were later on used to such good purpose. As a tentative measure the Government of India sanctioned the formation of a mounted corps of—

30 men, Royal Scots Fusiliers.

14 men, Rangoon Volunteer Rifles.

50 men, Burma Police.

The mules for the two native batteries arrived early in March. Owing, presumably, to the accounts given of the jungly marshy nature of the country in Lower Burma during the first two wars, it had been decided to leave the mules of these batteries behind, and coolies were sent instead. When it is realized that it took nearly 500 coolies to carry six guns and their ammunition for a short distance, we can understand that officers, going out with columns, said they did not want any guns, and we can also understand the feelings of Mountain Battery officers under these circumstances. It appears clear that at any rate, when the base of operations can be reached by water, mules should accompany batteries. From my own limited experience I should be inclined to lay down a rule that the country, in which mules cannot move, is not worth moving in.

It was now seen that more troops would be wanted to hold the country, but as the experience of former wars had shown how deadly the climate was in parts of Burma, at any rate during the rains, reinforcements were sent sparingly. Three more native regiments had, however, arrived by the end of March. About the middle of that month a column left Myingyan under Colonel LeMesurier of the 8th King's and established posts at Mahline and Meiktila.

It will be quite impossible to follow the movements of the hundreds of small columns that were sent out during this long and protracted expedition. I propose to give a description of one only of these dacoit hunts as we used to call them.

The officer commanding the troops, dropped in Myingyan in November, soon found that he was obliged to put out outposts from his station on the river. One of these was

at Natogyi, a large village, twenty miles inland. In January 1886 he got news from this post that a large gathering of dacoits was assembling in the neighbourhood. He accordingly sent out a small column composed of detachments of British and Native Infantry, with two guns of my battery and some Madras Cavalry. On the 15th January we left Myingyan for Natogyi. The guns, carriages, ammunition, etc., were hung by rope slings from bamboo poles that rested on the coolies' shoulders. The weight was great, the march a long one, over 20 miles, and the coolies were not accustomed to carrying weights in the manner described. The result was that the whole column was miserably delayed, and we did not reach our destination till 9 P.M. Next day we rested, and I took the opportunity of getting some pads of cotton wool made for the galled shoulders of my wretched coolies.

During the day news came in that two Princes had collected about 1,000 men at a village called Kanna, 18 miles off, and had given out that they would attack us in three days' time. Major Ommaney, who commanded our column, accordingly determined to break up this gathering at once, and at 6-15 that evening we started. We took twenty-eight men of the 8th King's, fifty-five sepoy, 11th Bengal Infantry, eighteen sappers with explosives, my two guns, and thirty-seven sabres, Madras Cavalry. I persuaded the civil officer with us to impress a lot of sturdy Burmans from the village, and thus having a double relay of coolies for the guns, kept up well during the march. For hours we dragged our weary way along, till about midnight we came to a village where we heard that a body of men on their way to the gathering at Kanna had halted during the day. These men were reported to be in another village on the road between us and Kanna, so we had to make a wide détour, but by 4-30 A.M. we were within a mile of our destination. Here we lay down in a deep, sunken road to wait for dawn. At 5-30 A.M. we were roused by the bells of the monastery at Kanna, which were clanging out a wild peal of alarm, and my native officer, a very shrewd and experienced man, told me that he could hear distinctly the trumpeting of elephants; this he interpreted to mean that our Princes were bolting. The whole column now filed through a thorny hedge and along a nullah till before long we deployed in front of the village. Dawn had broken, but we could see only a high prickly pear hedge before us. Major Ommaney now wished me to open fire, but I was very reluctant to do so for

fear of alarming our prey. While we were speaking, some shots were fired at us by the enemy. Our guns opened fire, and suddenly the cavalry, who, being mounted, could see over the hedge, said the dacoits were bolting on the far side of the village. Our sowers were at once sent off in pursuit. Now we heard a brisk fire behind us and soon our rear-guard came tumbling in. They had fallen into an ambuscade, and had lost one sepoy and four of the transport coolies shot dead at the first volley. The Infantry pushed through the village, and on emerging at the far side were joined by the Cavalry, who had killed thirty-seven of the enemy, none of whom were any longer visible. In the monastery enclosure we came on six neat little brass cannon, rifled on the Whitworth system.

It was now past 8 o'clock. We had been fourteen hours under arms, so turned our thoughts to breakfast. What was our horror then to find that, when our rear-guard was surprised, the dacoits had got possession of the whole of the officers' rations. We had absolutely nothing to eat. Our servants set to work to forage in the village and procured some fowls. What we missed most was our tea, but this want was partly supplied by the kindness of the men of the 8th who sent us the leavings of their tea kettles.

The day's work, however, was not yet over. Our indefatigable civil officer was still busy making enquiries, and about 2 P.M. he informed Major Ommaney that he had news that the Princes were in a village about eight miles off. The Cavalry were again ordered out, and volunteers being called for, eight men of the 8th King's came forward in spite of their fatigues of the night before, and mounting some captured ponies, went off with the Cavalry. They did not return till after dark. Nothing had been seen of the Princes, and one man, Private Kelly, who had fallen out to tie up his putties, was missing. He was never heard of again.

This little expedition is a good example of our operations generally. The long march to get within striking distance of the dacoits, the feeble resistance made by the Burmans when we were actually on them, the necessity of mounted men, for the Cavalry alone did the enemy any damage, the clever ambuscades made by the dacoits ; all are characteristic of the dacoit hunting in Burma.

The Viceroy (Lord Dufferin) and Sir F. Roberts, the Commander-in-Chief, visited Burma during this period of the war, reaching Mandalay on 12th February. A proclamation, annexing Upper Burma, was issued on 1st March 1886.

PERIOD II.

On the 31st March General Prendergast vacated and General White assumed command of the troops in Upper Burma.

The position was as follows:—

Thousands of the disbanded soldiers of the Burmese army had, as we have seen, made off with their arms. The civil administration collapsed on the fall of Mandalay, and dacoit bands roamed at large throughout the country; anarchy prevailed and in Mandalay itself plots were rife. Incendiary fires broke out in the native city, and an attempt was made to burn down the palace. Pretenders to the throne sprang up all over Upper Burma, and raising their standards in districts where the face of the British soldier had not yet been seen, attracted to themselves the disbanded soldiery and the criminal classes generally. Those who had old scores to pay off seized this opportunity to harry and plunder their enemies, and disorder reigned throughout the country.

The chief pretenders, who now appeared on the scene were—first, the Minzaing Prince, who made his head-quarters in the Shan Hills, east of Mandalay, and issued his orders from there. He kept the country in a turmoil to the south of Mandalay, especially in the Kyauksé and Hlinedet districts; secondly, the Chaungwa Princes, who lived near a place of that name in the Ava district; thirdly, Prince Hmatgyi, who harassed the lands round Swebo and Ye-u; and, finally, the Kemendine Prince, who appeared in the districts near Pyinmana and Yemethin. To oppose these pretenders and to restore order throughout a tract of country covering an area of 75,000 square miles, General White had at his disposal 10,500 men of all arms. These were raised by reinforcements to 14,000 and were distributed first at important posts as follows:—

In the valley of the Irrawady—Bhamo, Shwebo, Sagain, Mandalay, Ava, Kyauksé, Myingyan, Pagan, Minbu, Taungwingyi. In the Chindwin valley—Alôn. In the Sittang valley—Yemethin, Pyinmana.

At first attempts were made to compete with the dacoits by flying columns sent out from these posts, but these columns did more harm than good, for on their advance those who wished to see order restored would help us, but the dacoits wrecked their revenge on them as soon as the column returned to head-quarters. Thus it was found necessary to establish outlying posts, and in May the number of these had risen to 31.

The objects aimed at in selecting the sites for these posts were—

To show our troops in the districts and to let the Burmans see we had really come to stay in the country.

To establish rallying points for those who were well affected towards us, as well as refuges for those who had helped us.

To protect the main lines of communication.

To support the civil power in its effort to establish a settled government and to furnish starting points for our expeditions against the pretenders and the dacoits.

The officers in command of these posts, in many cases young subalterns, threw themselves zealously into the arduous task before them, and in the six months from 1st April to 30th September no less than 156 petty actions or skirmishes were recorded.

These however, as General White points out in his report, while giving some idea of the work that the troops were called on to perform, do not by any means show the whole of their labours; many expeditions and marches that proved abortive are not mentioned at all. There were in addition numerous convoys to be escorted over unbridged and unmetalled roads in hot weather and in rain often through flooded paddy fields, while the maintenance of postal and telegraphic communications and the collection of intelligence required the daily employment of patrols and detachments. All these duties were well and quickly performed by the officers and men to whom they were entrusted, but they entailed much exposure in a trying climate and led to a heavy loss of men in dead or invalided. In a little over nine months from the date on which our force crossed the frontier the total loss was 3,144, or rather more than 20 per cent. of the greatest number of troops at any time in the field. Of these about 300 were killed and wounded.

Let us run briefly through the conditions under which these numerous columns worked. No tents were carried, as good accommodation was found in the monasteries or *phongyi kyaungs* and in the *zyats* or rest-houses attached to them. These buildings are found at every village of any importance.

Good cattle for slaughter were to be got at most places. The Burmans would not sell them for slaughter, so we generally shot them and paid the owners afterwards. Paddy for the ponies was usually forthcoming and in most places plenty of excellent forage. In fact we had often only to

pull good kurbée out of trees in which it was stacked and throw it to the ponies and battery mules. These supplies were always paid for.

The kits were carried on ponies and the reserve rations in country carts. A marked feature of this campaign was the fact that it was easier to move the British troops than the native. It was only necessary to carry tea and biscuit for the former, as they could always shoot a bullock for meat. For the natives on the other hand everything had to be carried.

In the river posts the men, British and native, fared very well. Barracks for Europeans, made of teak, were sent up from Rangoon in pieces, all the timbers ready shaped and marked. A plan was then given to the Chinese carpenters from Lower Burma, who soon put the pieces together, and in a few months after the occupation our troops were actually in good barracks. Less expensive huts were made for natives, but they also were comfortably housed.

As regards food the commissariat department had no difficulty in keeping us well supplied. The fine steamers of the Irrawaddy Flotilla with their capacious flats lashed alongside brought up the stores to the river posts whence they were distributed to the smaller posts in carts. Fresh vegetables, tomatoes, onions, etc., were to be got at all the river-side stations. A good deal of bully beef was issued to the British soldiers. They would have preferred to kill and eat a fresh bullock at each halt, but large stores of tinned meat had been laid in during the Russian Scare of 1885, and these had to be consumed.

The men, British and native, of course wore khaki, and it was good and serviceable. The helmets did not afford sufficient protection for men who had often to march all day long in the sun, and there were numerous cases of sunstroke. Many officers wore big *solah topis* which, though not smart to look at, enabled them to carry on their work. Native shoes were not useful in Burma. In the districts where rice swamps abounded, or during the rains, the shoes were pulled off the men's feet: in the drier parts of the country the open shoe gave no protection against the thorns. Sepoys all preferred ammunition boots.

In the report on the civil administration we read, "the people of the country have not, as was by some expected, welcomed us as deliverers from tyranny." Perhaps it was some such sanguine hope that led to the despatch of a force without any transport except coolies. Luckily for us there were good carts in the country. The bullocks were always

plump and sleek and the cartmen invariably attended to the wants of their animals before their own. It was soon found impossible to work with coolie transport, and by May nearly all the coolies had been sent back to India. A scheme was then prepared allotting 1,450 ponies for 31 posts, so that flying columns could always be sent out with pony transport, and 1,000 ponies had been bought by that time at an average price of Rs. 48, a sum that makes one's mouth water when one thinks what splendid little animals Burman ponies are. Transport officers were now appointed to look after the animals at each post. A few of these officers came from India; others were selected from among those on the spot. Drivers and gear were imported from India.

PERIOD III.

By July 1886 the Commander-in-Chief had realized from General White's able reports that more troops were wanted in Upper Burma; he submitted proposals to the Government of India, and it was arranged that by October there should be 30,000 troops in the country. Sir H. Macpherson, Commander-in-Chief of the Madras Army, was directed to cross over to Burma and assume command. On the 1st of October he had done so and most of the reinforcements had arrived, but unfortunately Sir H. Macpherson died of fever at Prome on 20th of the same month. This necessitated a fresh arrangement, and the Government of India decided to send Sir F. Roberts himself to superintend operations, and on the 9th November that officer landed at Rangoon.

The troops were divided into six brigades with a separate command for the Chindwin river. The following table shows the distribution:—

Civil districts.		Brigades.	Commanders.
Bhamo	}	2nd	General Cox.
Katha			
Shwebo	}	5th	„ Stewart.
Ye-u			
Mandalay	}	1st	„ East.
Sagaing			
Ava			
Kyauksé	}	4th	„ Anderson.
Mingyan			
Pagan	}	6th	„ Low.
Minbu			
Pyinmana	}	3rd	„ Lockhart.
Yemethin			

General White Commanding the whole of the Upper Burma Field Force.

Shortly after his arrival Sir F. Roberts issued a circular for the guidance of all officers during the operations that were now to commence. The gist of it was that columns were to take the field with ten days' rations at least. A column returning to its base without completing its work would do more harm than good.

Officers were reminded that the object of traversing the country with columns was to cultivate friendly relations with the people and to gain their good will : that it was the bounden duty of all to see that the troops under their command did not injure the property of the inhabitants or wound their susceptibilities.

Where an enemy was met in arms, the severest possible loss was to be inflicted : if the dacoits got off without punishment, operations would be protracted and more lives lost in the end ; finally, the whole country was to be disarmed. It may be noted here that it was the wish of the civil authorities after the arms were given up to restore some of them to well-disposed Burmans. Sir F. Roberts severely criticized this proposal in words that deserve to be recorded for future guidance—" To restore arms to the well-disposed section of the community, with a view to enabling them to guard themselves and their belongings against dacoits, is an abrogation of one of the chief functions of a civilized government, the protection of life and property."

The " open " season had now arrived, we do not talk about the *cold* weather in Burma, and all were anxious to set to work. The arrival of Sir F. Roberts himself seemed somehow to send an electric thrill through us all and to brace us for our duty. We can only run through the chief operations. Beginning towards the north we come first to the hunting down of Hla-u in the country between the rivers Mu and Chindwin. On the 21st November the mounted infantry under Lieutenant-Colonel Symons surprised Hla-u in a fortified camp in the jungles. Hla-u himself escaped, leaving every thing behind. He was pursued for 40 miles by Colonel Symons. After this the great dacoit could do little but dodge about in the jungles. Six small columns hunted for him everywhere, and, as was proved afterwards, passed at times within a few yards of his hiding places, but could not lay hands on him. For months this pursuit was kept up. Hla-u's influence decreased daily ; his followers were encouraged to surrender on easy terms, while no mercy was offered to him. By the end of January 1886, 460 of his band had surrendered or been

captured and 550 guns had been taken. Still Hla-u evaded us, and it was not till April that news was received of his death. Some of his officers were gambling one night in his camp. Their wrangling disturbed Hla-u and seizing his English rifle he sent a bullet singing over their heads as a warning. This exasperated the officers, and one of them waited till Hla-u was asleep and killed him with a *dah*.

In the part of the country garrisoned by the 1st Brigade the most important operations were in the Kyauksé district. The chief dacoit leader here was Hmyat-Maung. His headquarters were at Hma-waing in dense jungle at the foot of the Shan Hills. On the 11th December three columns converged on him from Mingyan, Kyauksé and Wundwin. The enemy's tactics here resembled those of the tribes on our North-West Frontier. Our troops were allowed to march through the jungle unmolested till they reached the foot of the hills. Then the dacoits opened fire. The position being untenable, our columns would slowly withdraw and the dacoits keeping under cover would press the retirement till we were again clear of the jungle. In such desultory fighting we lost in four days three men killed and nineteen wounded. Two guns of my battery under Lieutenant Elliot took part in this expedition. So dense was the jungle, that he only fired sixteen rounds in the whole four days.

For the next three months columns were kept constantly moving, the villages near Hma-waing were burnt, crops destroyed and as far as possible the dacoit's supplies were cut off. In March the enemy's stronghold was again attacked, the position carried and many of them killed. The band now broke up and Hmyat-Maung himself surrendered to Major Ilderton, 2nd Queen's, at Wundwin on the 9th May.

In the district between this and the Irrawady the dacoits were led by Tok Kyaw and Boh Cho. They were soon driven from the more open country by our cavalry, but they took refuge in the broken and jungly ground near the foot of the Popa mountain, where they eluded capture for months. I myself hunted Boh Cho for three weeks in the Popa jungles without result and was afterwards informed by the civil officer that his spies had told him that Boh Cho had moved one march behind me all the time. I have, however, the satisfaction of knowing that it took our people nine years to catch this clever dacoit, and he was not finally disposed of till 1895. Tok Kyaw was killed in May 1887.

Crossing the river we come to the Minbu district. Here General Low was in command. He had one of the most important of all the operations, the hunting down of Boh Shwé. Up till now Boh Shwé had had the best of it. The post of Nga-peh, which had been established to overawe him, had been abandoned owing to its unhealthiness. General Low estimated that this post had cost us 500 men invalided. The civil officer, Mr. Phayre, had offered a reward for Boh Shwé's head, but Phayre was himself killed while attacking Boh Shwé in a strongly held pagoda position.

On the 15th December General Low re-occupied Nga-peh. On the 17th and 18th Boh Shwé was turned out of his camps and hunted into the Arakan Hills, abandoning his ponies, tents, clothes and records. Our force lost eight men killed and wounded in these encounters. On the 30th January Captain Golightly with his mounted infantry captured another camp high up on the Arakan Hills. In March the same officer again routed the Boh, killing 22 of his followers. After this the band was so broken up that organised pursuit became impossible, but Boh Shwé was not captured for many months. It was not till October 1887 that Major Harvey of the South Wales Borderers ran into him. That officer taking 80 mounted infantry rode 50 miles, rushed the dacoit camp at noon on the 5th October and killed the Boh with ten of his followers.

Last but not least in point of importance were the active measures taken by General Lockhart's brigade in the neighbourhood of Pyinmana and Yemethin. Here again the dacoits were having it nearly all their own way, their chief leaders being the Kemmendine Prince and Buddha Yaza. Pyinmana itself was almost in a state of siege, but this was soon altered. Between 21st October and 15th November eight columns went out, the last being the most successful. On the 12th November the camp of the Kemmendine Prince was captured, the dacoit leader escaping with difficulty. Many other columns moved rapidly about and in this district—the 1st Bombay Lancers under Captain Elliot and Lieutenant Tinley were specially active. They constantly overtook and cut up the dacoits earning from them the sobriquet of the Devils on big horses.

On the 1st January 1887 in the early morning some mounted men, chiefly of the 1st Bombay Lancers under Lieutenant Lampport, R.A., rushed the bivouac of the Kemmendine Prince killing him and thirty of his men. By the 1st February General Lockhart was able to report that he had broken up all the dacoit gangs and that the establishment

of posts, bringing up of supplies, road-making and above all the beginning of work on the railway had convinced the Burmese that the British occupation was to be permanent, and that the best thing they could do was to side with us.

Besides all these operations other important work had been done. Columns had visited the Ruby Mines, and the Shan plateaux; posts had been established there, as well as in the Yaw country on the west side of the Irrawady behind Pakoko. The Chindwin valley had not been neglected, and our troops were comfortably installed at Mingin, Kaléwa and Kindat on the banks of that river. Sir F. Roberts now reported that the big gangs had everywhere been broken up, the people generally had been disarmed and were returning to the tilling of their fields and other peaceful avocations. It was decided that a large portion of the troops should return to India, and that the work of further pacifying the country might be handed over to an adequate police force, armed, drilled and organized upon a military system. All the corps returning to India were called upon for volunteers for this military police force, and many sepoys availed themselves of the chance. From my battery alone 40 men volunteered out of 200.

There are many points of interest connected with this campaign. Among them is the development of army signalling. We have seen how by army signalling all the orders were distributed throughout a line of steamers, four miles long, as the expedition came up the Irrawady. We find from a report drawn out by Captain Spratt, R.E., that in January 1887 there were no less than 59 stations signalling through 1,150 miles. In this month alone 30,700 messages were sent at an average cost of 1 anna 7 pies per message. On the other hand when an urgent message had to be sent from a station, where there were no signallers and no telegraph, the cost of transit came to Rs. 4.

Mounted infantry.—This arm which proved so remarkably useful began with an establishment of about 90 men sanctioned in November 1885. In March 1887 the Government of India allowed the total to be brought up to 1,600 men. Both British and native infantry were employed in this manner. They were mounted on ponies bought in the country, small, cobby animals with good barrels, loins, legs and feet. The average height was about 12-2, the average price for the first 800 ponies bought was Rs. 105, the average weight of a mounted infantry soldier with rifle, 40 rounds, saddle and bridle was 14 stone 7 lbs., and the ponies covered as much

as 40 or 50 miles on many occasions with these weights in 14 or 17 hours.

Artillery.—The mountain guns that were taken on so many expeditions might just as well have been left in India. The object of artillery is to open fire at long ranges and to break down the *morale* of the enemy. Now in Burma there were no long ranges, guns were fired at distances varying from 40 to 500 yards and the enemy had no *morale* to speak of. The dacoits frequently took up positions in walled enclosures surrounding the pagodas that are dotted all over the country. Our guns would open fire, the dacoits always cleared out as soon as the first shrapnel burst over their heads, and they were safe away in the jungles long before the infantry could close with them. Had there been no guns, the dacoits might have stayed, and have been more severely handled, although with a possible loss of a few more men to ourselves.

Cavalry.—The work of the cavalry was excellent. Luckily the Inspector General of that arm is present and will speak of it himself.

CONDUCT OF THE WAR.

In March 1887 the troops in Burma were split up among 141 posts. This sub-division of troops into very small bodies gave junior officers frequent chances of distinction and they certainly rose to the occasion. This war in fact is often spoken of as The Subalterns' War.

COST OF THE WAR.

The cost in money is not shewn in the official history.

About 450 officers and men were killed and wounded up to March 1887. The number who died or were invalided may be put down at over 5,000.

RESULTS OF THE WAR.

Towards the end of the War, two British soldiers were overheard discussing the situation in Burma, and one of them summed up as follows: "You see, Bill, this is 'ow it is: these 'ere is all a lot of black devils and we came 'ere to civilise em." Whatever our motives may have been, the annexation of Upper Burma has been a complete success. Though at first we met with much resistance and the work of pacification

proceeded but slowly, yet true to the best traditions of the British character, we persevered and made a good job of it.

As our reward, we gained possession of a beautiful and fertile country, roughly speaking as large as France, inhabited now by a cheerful and contented population. It yields a revenue which after paying for the administration of the province gives a surplus for the Imperial exchequer.

What may prove more important still, it gives us a good starting point in the race with France for the trade of Yunnan, the land-locked province of South-Western China.

DISCUSSION.

Major-General Elliot, C.B., D.S.O., said—

YOUR EXCELLENCY, LADIES, AND GENTLEMEN—

I think Major Keene in his lecture has covered nearly every point, but as I had the good fortune to have been in Burma during the operations as a Regimental Officer, I may perhaps be able to make a few remarks that may interest.

There were four Regiments of Cavalry divided up amongst the several Brigades—one Madras Regiment, one Hyderabad Contingent, one Bombay, and one Bengal. They were mostly split up into small commands of from 20 to 40 men in each post.

As regards the Burman opposition, we know it was the remnants of the old army, joined by gangs of budmashes—terrorising and living on the agriculturist and village population. They had no transport, as they lived on the country. They were badly armed and had no trained leaders. Never having seen anything bigger than a Burmese pony, they were quite unable to gauge the abilities of a man mounted on a horse, and it was perhaps lucky for us at times that this was so.

Information was hard to get, and we relied chiefly on Burmans taken prisoners or paid informers; also at times gang leaders quarrelled amongst themselves, and the party worsted came in to give information against the remainder.

The methods of attacking these gangs were generally as follows :—A forced march timed to arrive in the vicinity of information given at about 3 or 4 A.M. A reconnaissance on foot and an attack as soon as it was light enough to see to ride the country. Nearly all Burman villages are surrounded by high and thick thorn hedges, and the gates, as a rule, stockaded and spiked. It was advisable on account of the latter to, as a rule, avoid all used communications in the vicinity of villages or positions held, as they were nearly always spiked. If the hedges were too big to get through or over, they were set fire to at points and entry made. Burmans have a horror of the jungles at night; consequently we used to make a practice of doing all our work for preference between sunset and sunrise.

A few words in regard to advance and rear guard detail. In jungle or country where sudden attack or ambush was probable, it

was found a good plan to divide the command as follows : say, for instance, a party of 30 men, advance party 10, support 10, and reserve 10, the whole told off, odd and even files, and advance made on right file with considerable distance between files and separate parties. If attacked, the odd files formed to flank on right, the even to left. This gave three lines at supporting intervals. The general idea being to flank at once and converge at increased pace. By this means preconcerted attack was foiled and touch established without delay. The men were instructed to ride into whatever confronted them and support one another as best they could. Owing to the thickness of jungle and want of communications, any more detailed orders were impossible until situations developed, when the senior with the party gave what orders seemed most suited to the circumstance.

The same orders in regard to rear guard which of course went about before acting. If the attack came from a flank, the whole worked to that flank, but often in thick jungle it was hard to tell where the shots came from at first.

The only instance I know of a pursuit of mounted Burmans was in General Lockhart's Brigade at Kadugon. On 1st January 1886 a party of Bombay Lancers pursued and cut up about 100 mounted on Burmese ponies. The pursuit was carried on for nearly 9 miles, the smaller animals holding their own as regards pace in the rough and heavy country in the most extraordinary manner against the bigger horses and heavier men. About 60 ponies were captured. A good many casualties in horses occurred, both officers and men as well had very severe falls over the teak trees, cut and lying in the grass and jungle, where it was impossible to evade them in pursuit. About 70 Burmans were killed. As regards the mounted action of the cavalry in Burma, we may assume it was as regards the Burman a case of 'omne ignotum pro magnifico!' The results were extremely useful in the general pacification of the country.

Colonel Saunders said—

YOUR EXCELLENCY, LADIES, AND GENTLEMEN—

I have not very much to say after Major Keene's able discourse on Burma, but one or two things strike me.

When the proposal was originally submitted there were two schemes—one was a land column and the other a river which were to join hands at Myingyan. This, however, was not carried out in its entirety, as it was evident the land column could not proceed at the same rate as the river, and it was absolutely necessary that the blow should be struck quickly. The other point is as regards the laying down of the arms of the Burmese Army at Ava which Major Keene spoke about.

General Prendergast has in some quarters been rather severely criticised for his action in that matter. Now it should be remembered that the Burmese Army had received intimation from Theebaw that they were not to oppose the British, and on the 27th November again received a royal message to that effect ; and it was

evident that, under the circumstances, General Prendergast could not do much more than he did do, considering the nature of the country and the fact that the whole of the Burmese troops were not there. A great many had gone to their homes on the other side the day before with their arms. These men dispersed and disquieted the rest of the country as Major Keene has told us. That unrest spread to Lower Burma, and Lower Burma was just as much disturbed as Upper Burma when Lord Dufferin pronounced it annexed.

When General Prendergast returned to Lower Burma, he found the troops were dispersed about the country and commanding officers did not know where their men were. The only way of getting them together was an arrangement made with the civil authorities to put a certain number of troops belonging to the same regiment in one district. By this means and the troops coming in and asking for food, we learnt where they were. In six weeks we had them collected, and it was wonderful how they quieted the whole country. Information was also obtained by the civil authorities from the police which helped matters. This was not, however, the case in Upper Burma where they hadn't the same facilities as the civil administration that came later.

After the landing of the troops at Mandalay, it was a question for sometime whether there would be any resistance, but the whole thing quieted down when Theebaw went away.

Sir Charles Nairne, K.C.B., said—

It only now remains for us to thank Major Keene for the lecture and the other officers for the very interesting discussion which has arisen since the lecture. These personal reminiscences are of immense value. We only hope that Major Keene will some day take up another country, as military history seems to be in his line. He alluded to the campaign as a subaltern's campaign. That is quite true, and it has been of the greatest possible help to those who have to select men for various work. You always find that a subaltern is well known for what he did in Burma, for in this particular instance he did a very great deal and earned well-deserved praise.

"THE CREATION AND MAINTENANCE OF A RESERVE OF OFFICERS FOR THE INDIAN ARMY."

BY CAPTAIN A. E. AITKEN, I.S.C.

MOTTO : "Spero Meliora."

In considering the question of a reserve of officers for the Indian Army, it is taken for granted that on the principle of "nothing for nothing and very little for sixpence," Government are prepared to pay for a suitable article, as it can hardly be expected that the class of gentlemen, from whom the supply of reserve officers could be drawn, would be willing to give time and trouble to preparing themselves without some reward from the Government they are willing to serve. Again, human nature is not such that good work can be expected without some hope of reward or advancement. Secondly, in considering the sources of supply and the training requisite for them, neither mountain batteries nor sappers and miners are taken into consideration; the former because a sufficiency of officers could be obtained from the Royal Artillery, and the latter from the Royal Engineers, besides which both require such special training as would hardly be possible in the time which would be available for reserve officers to learn their work. This, therefore, leaves us only the cavalry and infantry to deal with, and this considerably simplifies the question of training and expense. Lastly, social position of candidates is not discussed, as Government would of course decline to place on the reserve list any candidates considered undesirable either socially or otherwise.

Reference has been made above to Government paying for a "suitable article," and therefore it now becomes necessary to consider what is a suitable article, and what conditions should be fulfilled to enable gaps in the ranks of officers to be filled as satisfactorily as circumstances permit in times of emergency. The following three conditions would be necessary, in fact indispensable, in any body of reserve officers, before they could be considered really suitable. Given these three, we have material which could, with comparatively little

care and trouble, be worked up with very satisfactory results.

These conditions are :—

- (i) Knowledge of life in India which would include knowledge of the language.
- (ii) Experience in dealing with natives which would include tact, temper, and general suitability for handling natives.
- (iii) Sufficient elementary knowledge of military matters as would enable reserve officers to take up the simple duties of military routine. Under this heading would come not only drill, shooting, and parade work, but also a certain amount of experience in the ordinary daily routine of a native regiment. Of course it can hardly be expected, except in a few exceptional cases, that any intimate knowledge of regimental routine could be obtained, but a slight knowledge would assist an officer called up from the reserve in dropping into his place more easily than he would, had he got no experience at all of such matters.

Have we then in India any sources of supply which will give us the class of men that is required; and, if so, what are these sources, and could they be made available in sufficient quantity for our purpose? The answer to this seems to be decidedly in the affirmative, as Government could make, if they chose, any or all of the following, except the last named, available for the purposes of a reserve. These are :—

- (1) The Indian Civil Service.
- (2) The Public Works Department.
- (3) Police.
- (4) Forest Department.
- (5) Telegraph Department.
- (6) Post Office Department.
- (7) Railways.
- (8) Civilians (*i.e.*, merchants, bankers, planters, and the European civil male population generally who are not in Government employ).

It will be seen from the above that the first six are purely Government departments, the seventh is practically so, and even in the case of railway officers, who are purely company servants, Government could probably bring influence to bear to attain its object. Even supposing this could not be done as regards unofficial (*i.e.*, non-Government) railway officers

there are a large body of Government railway officers in the uncovenanted service. This, then, gives us practically seven sources under Government control, and one source (the last) which would have to be attracted into Government employ by the offer of rewards for efficiency and other considerations of a like nature. How then can these sources be made available ?

The solution suggested is a modified form of compulsory service for all appointments under Government. This principle is already in force in India to a certain extent, as some, if not most, of the railways expect, one might almost say oblige, their able-bodied employés to join the volunteer corps of the railway. Again, in some districts, either through the personal interest taken in the local volunteer corps by the head of the district, or from a desire that all available material in a district should be worked up for times of emergency or similar reasons, pressure is brought to bear to a certain extent on Civilian Government officials to join the local volunteers. In 1892 a suggestion was made to Government, by the Committee assembled to consider volunteering questions, that pressure should be brought to bear on all Government officials to join the local volunteers. This possibly accounts for the action taken in certain districts. If then this pressure can be successfully applied in such cases as are given above, it should not be impossible for Government to make such terms with its employés, when first appointed, as would enable Government to call upon them when required, and so have always ready at hand a body of men in reserve who would make admirable officers, and who fulfill two of the conditions laid down above, as necessary, and who could easily be trained so as to fulfill the third condition.

There might be an objection raised to any form of compulsory service, but no one can dispute the right of Government to impose what conditions it chooses when granting first appointments in its service. There would be no hardship entailed in the elementary training as sketched out further on, and even if there were, the history of India has often shown us all the advisability, even necessity, for each able-bodied man being ready to take his place in case of grave emergency, and the very modified form of compulsory service herein suggested should therefore be a duty which all should undergo willingly. Another objection which might be raised is that, if trained men were taken away from their own work in time of emergency, their respective departments would be crippled at a time when their best men would be most need-

ed. But the reply to this is that, compared with the total effective strength of the departments given above and of available civilians, the number required to form an effective reserve would be comparatively a small percentage, and if the demand for reserve officers was fairly divided over all the sources of supply referred to above, there would be no great likelihood of any particular department being seriously crippled. The railways, post, and telegraph departments might not be able to furnish any large number, as they would have a certain number of their strength either employed in mobilisation or actually with the field force with their departments, but even then they could contribute some. Again, an important condition of this suggested compulsory training is that only juniors would be enrolled in the reserve, that is to say, up to about ten years' service, as not only would they be far better able to adapt themselves to the new surroundings of military life if called upon to serve, but also their being taken away from their proper duties would not upset the work of their own departments so much as taking more senior men; and, lastly, it would hardly be desirable in the interests of military efficiency to take senior men, as on the one hand they could not well be put in subordinate positions under men probably much younger than themselves, and on the other hand they would not be sufficiently trained to take up responsible duties or positions suited to their age and service. Although ten years is suggested above, if any number of reserve officers were called out, the best material would probably be found amongst the juniors, that is to say, about four or five years' service, as by that time they would have gained sufficient experience of natives and of India which is so requisite, also a certain amount of military training, and besides this they would not be sufficiently senior to cause any friction on that ground. Besides which ambition, and in certain cases the hope of a possible commission, probably would be a stronger incentive to a young man than a senior one.

As regards the number of reserve officers that would be available if this condition of compulsory enrolment were enforced, there would be little doubt that sufficient numbers would be forthcoming to meet all probable requirements of the Indian Army. There are in the Indian Army 175 regiments (40 cavalry and 135 infantry) which would have to be considered. If a reserve of four officers per regiment for half that number were kept up, it would give a list

of 350 candidates to draw from, and out of all the sources quoted, it should not be difficult to get that number.

Presuming, then, that this form of compulsory enrolment is enforced, how much training would be required to enable reserve officers to become usefully efficient, and what would be the best system of maintaining their efficiency during the years they are on what might be called the reserve list.

As regards the training, rules regarding it should be made as elastic as possible to suit the various conditions of Government service, as well as business men, throughout India, while at the same time they are stringent enough to ensure the standard of training being fully and properly carried out. Again, as the time for instruction is of necessity so short, care should be taken not to enter too minutely into detail, and the system of instruction should aim rather at a useful general knowledge of military duties, than an exact knowledge of any particular part of it. If this is not more or less insisted on, the tendency would be to put reserve officers during their training through their drill with the exactitude that a recruit is trained, instead of treating him as an intelligent, educated man, and so training him that he gets a good view of the whole daily routine of regimental life. On service practically exact drill and such like is left behind, and a reserve officer called up to join a regiment, who had a useful elementary knowledge of outposts, or advance guard would be far more useful than one who had been so trained that he could give correctly the whole of the firing exercise or physical drill, while he knew little or nothing of the principles of attack or fire control. At first probably it might be difficult to get an even standard of training, but there should be no difficulty in laying down broadly what is wanted, and by degrees an average standard would be attained.

On this principle then of good general knowledge being more useful for our purpose, than exact knowledge of any particular part of military work at the expense of some more important portion of it, what would be the best method of training reserve officers to begin with, and, secondly, of maintaining their efficiency, and encouraging them to improve themselves to the best of their ability and opportunities. This, of course, is a matter of detail to a large extent, but so as to explain the principle of the method suggested, let me divide it into two heads, namely—(i) actual training, and (ii) examinations, with rewards attached, for extra efficiency.

The first part of these, *i.e.*, the actual training, would be compulsory, and the latter part, the examinations, would be voluntary and graduated.

Let us take the training first. As soon as any officer was appointed to any post under Government, he would at once be placed on the list of reserve officers, subject of course to his being medically fit. This liability to serve on the reserve list would be a condition of appointment to any Government post, but as regards civilians not under Government, they would have to be encouraged to volunteer. Officers on the reserve list would be retained in it up to ten years' service, the first five of which would be looked upon as the important part during which the training would be strictest, officers of over five years' reserve service being as it were an extra supply kept trained in case of emergency, but not to be called out till the supply of officers under five years had been exhausted. The reasons for this, so as to ensure only junior officers being taken, have already been explained, while all gaps in the ranks of senior officers would be filled up from senior officers in the service. As soon as an officer had been enrolled in the reserve, his wishes as regards being posted to cavalry or infantry should be noted; but the actual posting to one branch or the other should rest absolutely with Government according to requirements, and once posted it would hardly be possible to permit an exchange, as time would not permit of training being carried out afresh before the important period of the reserve service (*i.e.*, the first five years) had expired. Of course there might be cases of exceptionally keen reserve officers who, though posted to infantry for instance, took advantage of any opportunities they got, and thereby trained themselves in cavalry duties sufficiently to justify a transfer to the cavalry list; but these would be the exception and not the rule in all probability, and might be considered by Government as special cases. Having then classified the reserve officers according to the requirements of the cavalry or infantry branches, lists should be made out of all reserve officers residing in each military district according to districts, and a copy of the list for his district should then be sent to each general officer commanding with whom would rest all arrangements for the training of reserve officers subject, of course, to such general instructions as Government might find necessary to issue. General officers commanding districts would again sub-divide their lists, and send such portions as concerned them to the officer

commanding each station in their district where the headquarters of a native regiment was quartered. Reserve officers would, of course, have to communicate all permanent change of residence to the chief staff officer of the district he was serving in, and all changes of districts (*i.e.*, military districts) amongst reserve officers would be communicated by general officers commanding to each other, as might be required. By this means the military authorities would keep touch with all reserve officers in their respective commands, and would know what training had to be carried out. Now as to the amount of training, when to be done, and what it should consist of.

First, then, as to the amount. This should be, if possible, two months during the first year of service, and one month each subsequent year up to five years' service, after which one month every alternate year. There should be no great difficulty in getting this amount of work in, as district officers of all departments are out in camp, as a rule, only during the cold weather, which would leave the hot weather and rains during which the requisite time could most probably be conveniently spared. To make things easier, a fortnight's training only might be permitted in special cases. The actual time of year for the training would be settled by the officer concerned, or the head of his department for him, in conjunction with the military authorities of the district concerned. On intimation from the civil authorities that an officer or a number of officers were ready to go through their reserve training, the military authorities of the district concerned would attach them to corps most conveniently situated, and the officers concerned would then proceed at Government expense to join their respective corps. Having joined, they would become to all intents and purposes officers of the corps during their training. By this arrangement there would be no chance of any reserve officer being taken from his legitimate work at an inconvenient time, as it would rest entirely with the head of his department or office to say when he could be best spared.

Now as to their training. It has already been said that this training should aim rather at a general useful knowledge of military duties than an exact knowledge of any one part of it, but at the same time it is important there should be a certain amount of solid foundation to work on. The officers obtained under this system would be all educated men, and consequently far above the standard of the best recruits.

They would therefore get through the details of all necessary exact drill much quicker. In the first year, during the two months' training, an officer should be grounded as thoroughly as possible up to, say, battalion drill and simple fire control exercises. All elementary exercises, such as physical drill, etc., being omitted, and the officer pushed on so as to make him fit as far as possible to act as the subaltern of a company on parade. Having in this way started with a practical knowledge of as much exact drill as would probably be necessary, all subsequent trainings would be devoted to instruction in the field, attack, outposts, etc. The exact details of this training would have to be left in the hands of officers commanding corps and general officers commanding, and all that would be required would be broad general directions as to the style of instruction and the standard Government wished attained.

As regards civilian officers, they would have to be encouraged to volunteer, but having done so, and been accepted, they would go through the same training as reserve officers serving Government. So much, then, on broad lines as to the system of practical training.

Now let us consider how to maintain the efficiency of reserve officers and encourage them to further improve themselves, over and above what can be done during the short periods of training. The following suggestions would probably have the desired effect, and no doubt others could be brought forward equally good, but these are only suggested, as examples:—

- (1) Pecuniary rewards for passing military examinations.
- (2) Employment of candidates, who are able and willing to go, on some of our frontier expeditions, as orderly officers or in similar billets where they could gain experience of field service.
- (3) Grant of commissions in the staff corps, if possible.
- (4) Remission of income-tax, exemption from serving on juries, or any similar concessions.

As regards all these methods of rewarding zeal, they would all have the condition attached to them that candidates must have gone satisfactorily through their first year's training, at the end of which they must have passed a satisfactory written examination in elementary drill, musketry, and fire control, etc. Until a reserve officer had passed this, he would not be eligible for any of the concessions or rewards offered by Government. Taking the methods of rewards given above

let us consider them separately. Firstly, their pecuniary rewards. These should be based on the same principle as the language examinations are, namely, graduated as to difficulty and amount of reward according to the standard of qualification attained. There might be, for instance, three standards of examinations, namely—(a) the ordinary examination for admission to the staff corps, (b) then an examination in tactics, fortification, surveying, and law equivalent to the examination for promotion to captain in the British service, and (c) thirdly, the full “c” and “d” examination, for promotion to major. Each of these examinations should carry with it a good pecuniary reward, and in the two last (b) and (c) it would probably encourage officers to pass if the examination could be divided up, so that candidates could pass their one or two subjects at a time in a given order as opportunity occurred. The reward, too, might be divided proportionately as each part was passed. It would often happen that a candidate might be able and willing to take up the examination bit by bit, whereas the whole examination at once might be too great a demand on his spare time, and it would be better that reserve officers should be encouraged to study even one subject and pass in it, than to give up the whole of them through having too much to do at once if compelled to pass the whole of (b) or (c) at once.

As regards the second and third methods of reward, it would undoubtedly encourage enrolment in the reserve if officers in it knew there was a chance of seeing service. Not that many could be spared probably, but even if a few were so employed, it would have an excellent effect. Then as to the gift of commissions in the staff corps, the opportunity for this would seldom arise; but supposing reserve officers were occasionally sent on some of our frontier campaigns, officers of real merit would probably be discovered whom Government would wish to keep in the army, and it would be useful to have the power to do it. Again, in times of real emergency, when the whole or the greater part of the reserve were called out, the method of rewarding good services by commissions could be and would be resorted to; and although this form of reward might not appeal to the Indian Civil Service, who are better paid and get better pensions than the Staff Corps, still there are large numbers of young fellows in the other Government departments and in civil life, who have failed for Sand-

hurst and Woolwich, or were not able for some other reason to get into the army, and these would probably gladly take any opportunity that made it possible for them to get a commission, and would willingly volunteer for service with this hope, if they could be spared from their proper work.

As regards the last form of reward, Government could no doubt find some method of repaying reserve officers for their time and trouble in qualifying for military service, and any money spent in this way would be well spent.

One more method of reward will, of course, suggest itself, and that is, an allowance of pay while out for their training, but this depends entirely on what Government are prepared to spend to have a serviceable reserve. Again, it might be argued that if Government imposes a certain amount of military training as a condition of service, then the pay of any particular appointment should cover any such extra service rendered. But this argument would hardly be a fair one, as the pay of civil appointments as fixed now does not include the possibility of military service, and it would hardly be just to throw in extra work without extra remuneration. Besides this, while attached to regiments, also so as to be ready to turn out when required, reserve officers would have to provide themselves with a certain amount of uniform, revolver, sword, etc. The uniform need only be khaki sufficient for parade work; but to meet the initial cost of this and of the necessary accoutrements, it would be money well spent if Government could give a small allowance of pay to reserve officers for the time they are at training, as this would cover not only the upkeep of uniform, etc., but the inevitable extra expenses which would fall upon an officer while out for training, such as, for instance, travelling expenses not covered by the Government passage, subscription to the mess as honorary member while attached, etc. This grant of pay would of course depend on a satisfactory report at the end of a training from the commanding officer under whom the training was carried out, without which the pay would be withheld.

In this way, then, it seems quite possible not only to have a reserve of officers for our Indian Army, as fine a body as could be wished for, but also one which could be so trained that in a very short time on service they would shake down into their places, and prove of value to the army in which they are serving.

To summarise shortly the suggestions put forward, they are as follows :—

- (1) Compulsory enrolment in the reserve of officers for all who may be appointed to any post under Government for the first ten years of their service, the first five to be the important part, and the last five supplementary, as it were, to the first period, so as to have a sufficiency of officers in case of need.
- (2) Compulsory training, somewhat on the lines of the militia training in England as to period, but on more general lines as to instruction imparted, so as to fit a reserve officer to carry out as far as may be the duties of a company officer.
- (3) A system of military examination on the principle of the language examinations with good pecuniary rewards attached, the examinations to be so arranged that officers may pass them with as little extra labour as can be made possible, consistent with efficiency.
- (4) A small grant of pay during training to cover unavoidable incidental expenses, if this can be managed.

This, then, is the scheme suggested for the purpose of carrying out the subject of this essay, and one or two small points remain to be dealt with. Firstly, the whole of the scheme rests on the principle that Government can, and will, dictate the terms of employment to their servants, and the conditions of our existence in India would seem to justify such action as pointed out above. Railway companies in certain cases practically manage to bring about compulsory training in the volunteers without any great trouble, and it therefore should not be impossible for Government to do the same. At the same time they could only bring moral pressure to bear on the civilian source of supply, but there is reason to suppose that the spirit, which prompts men to volunteer now, will act upon them equally efficiently, and prompt them to enrol themselves in the reserve, provided Government will treat them equitably, and hold out fair rewards in return for a reasonable amount of labour and a satisfactory standard of efficiency. Lastly, in dealing with this question in this essay, no attempt has been made to go into detail at all beyond what is necessary to explain the scheme suggested. The principles of the scheme are set forth in the short summary given above ; and provided those principles are adhered to, the details of the scheme such as length of training, system

of instruction, and similar points could easily be settled afterwards, as it would be quite impossible to settle off-hand details or rules which could be applicable to all the circumstances of official life and work in India. As regards the expense of the scheme, this could be controlled by Government limiting the strength of the reserve list, that is to say, calling for volunteers in the first instance and then enforcing their right to compulsory enrolment, should the number of volunteers prove insufficient. This, however, is a point which could be settled hereafter when the number available had been ascertained. Another point to be dealt with would be those already in the service, but most probably a certain number would volunteer which would form a nucleus from which to start. There would, of course, be difficulties in the working out of details, such as expense, etc., but the labour would be well worth the trouble, if thereby such a body of men could be held in readiness as a reserve of officers, as are to be found in our Indian covenanted and uncovenanted services, men who not only know India, the natives, and their ways ; but also have as a body all the sporting tastes and instincts which help to make our best officers, and, once the necessity for a reserve is properly understood, an appeal would not be made in vain, not only to enrol themselves, but also to willingly undergo such training as would fit them for their duties as officers in time of need.

THE MOBILITY AND INDIVIDUAL TRAINING OF OUR INDIAN CAVALRY.

BY AN INDIAN CAVALRY OFFICER.

MOTTO : *Activité vitesse toujours la vitesse.*

Indian cavalry is essentially light cavalry whose duties require extreme mobility—the power of being able to move 40 miles a day for three or four consecutive days whilst retaining its full fighting capabilities, whether employed against a civilized or uncivilized foe.

So far our Indian cavalry has been employed only against undisciplined troops on the plains of India and China, or against hordes of savages along our North-West Frontier over very rough ground, and in Egypt.

In the future Indian cavalry will always be employed against those same foes, and possibly against a disciplined European army, in which case they would still be utilized in their role of light cavalry, with the support of British cavalry.

In our training great importance is laid on the movements of troops in masses at regulated paces, and exact drill, little attention is paid to detached duties and none whatever to the power of making long and rapid marches without casualties amongst horses, and none to the development of the capabilities of the individual man, or to the training of horses to go over rough and bad ground.

In our wars against Eastern Nations steady training in the movement of solid bodies at a high speed is most important, as we may be opposed to vastly superior numbers ; but if to this training we can add a great power of mobility, how much more useful would we be.

It is impossible to overestimate the power of mobility—the power of being able to find the enemy quickly, discovering his intentions and being before him on every occasion. The highly trained squadrons of Fredrick the Great—squadrons which were true cavalry and trained to manœuvre over difficult ground at high speed, and against which the regular Austrian cavalry had no chance—were powerless in performing ordinary light cavalry duties, in the presence of the Austrian irregular horsemen, who surrounded the Prussian army and placed it in great straits by preventing any information or provisions being obtained.

In 1813 partizan cavalry harassed Napoleon greatly. Again, during the American Civil War, the power of mobile horsemen was enormous. Our Indian cavalry is probably better mounted than any light cavalry ever has been, and our equipment is decidedly superior, and so with our drill and discipline we should do far more than ever was done before in this way; but we have no training or practice to prepare us for our light cavalry duties.

Our camps of exercise are always held over limited spaces and almost invariably on absolutely level country. Manœuvres are generally confined to distances under 20 miles, never 80 or 100 miles.

If cavalry manœuvres are therefore always confined to short distances, officers and men cannot be imbued with a feeling of the strength and mobility which they possess, the knowledge of which is undoubtedly necessary.

If long marches were performed with some object, such as a raid, surprise, or to obtain certain information, and the crossing of rivers practised and a feeling instilled, that if an obstacle is met, it must be circumvented somehow, officers would have to exercise their judgment and resource and those qualities necessary in warfare.

Particular care and attention must be given to saddling* and the care of horses during extended movements. Men should be taught to dismount and lead their horses. On a long march it would ease horses greatly if, for instance, after marching three hours, the men dismounted and marched one hour leading their horses, they would thus get over $2\frac{1}{2}$ to 3 miles, and besides easing their horses, would stretch their own legs.

For long marches men and horses should be accustomed to go with as little clothing as possible and without any transport, a blanket each for horse and man, or a coat for the latter, and obtain food from the country passed through. Every endeavour should be made to lighten the load for the horse.

It has always been recognised that the cavalry officer, above all others, should be a man of resource, ready to take the initiative, and act, as circumstances direct, according to his judgment, but is he taught or encouraged to do so?

* Experience alone can teach a man good saddling, and a march of 40 miles will often prove the fallacy of many theories, the condition and even the action of some horses must be taken into consideration in saddling.

Strict orders are laid down for the carrying out of all training, and non-compliance with the schedule of parades laid down calls forth questions from the district staff. Apparently no initiative is allowed or expected from commanding officers. Naturally a feeling exists that, if orders have been complied with, further responsibility does not fall on commanding officers, and so here in the very commencement, in the training of his men, the exercise of judgment is checked in the commanding officer and all officers under him.

It is necessary to guard against theorists, faddists, and idlers ; but if general rules were laid down and capabilities of corps judged by practical tests before competent men, during extended manœuvres, against other troops, officers would be encouraged, and there would be more life in the training.

Hard and fast rules for the training of light cavalry become dull routine, void of interest and life, which can never be instructive ; and if there is no life in a corps, there can be no desire to go and act, without which the true mobility cannot exist.

As regards the individual soldier, in olden days our Indian cavalry were able to procure men who were born and brought up in the midst of tribal warfare, were used to hardship, had a natural aptitude for the use of arms, and were horsemen. Now we do not obtain this class of men except from across the frontier, and the bulk of our recruits have no more idea of horsemanship than the ordinary British cavalry recruit, therefore it is most necessary that we should be most particular in picking our recruits and not be content with those who offer themselves in the lines, or blindly stick to a tribe on which there is a great demand. Recruiting officers can generally procure good men if commanding officers will not tie them down to particular classes, but regimental officers should be encouraged to try and obtain likely men when out-shooting in the districts. Short leave is very sparingly given during the cold weather, but it would be most advantageously given, if given with the object of obtaining recruits.

The recruiting question is so important that every endeavour should be made to obtain the very best men and make them as hard and useful as possible.

According to our present system, the recruit who has rarely any idea of horsemanship is put at once into the riding school and taught a number of aids, the necessity of which he does not understand, and so continues his education in a

mechanical manner, without gaining that feeling of sympathy and confidence which should exist between man and horse, and is absolutely essential to the true horseman.

Now if, on the contrary, the recruit was taken out in the country over open ground at first, until he had gained his balance, and then gradually over all sorts of rough ground, and also taught to ride at speed, until he learns to stick to, and control his horse, he would be obliged to put his legs to the horse and so with balance to ride it, and he would be interested. Having got so far in the education of the cavalry recruit, if arms are now put in his hands, he feels that he is not yet a horseman, and that certain aids are necessary to him ; these he will quickly pick up when explained to him in the riding school, and see the object of applying them.

The next step should be the use of sharp weapons. It is quite impossible to teach a man to be dangerous to his enemy if he constantly uses blunt weapons. To induce a man to exert himself in a cut with a sword, or point with a lance and so realize his power, he must have the satisfaction of seeing the results of his cuts or points which can only be attained by using a sharp weapon. What can a man possibly learn by going over a small jump and cutting at a dummy head on a thin piece of wood which breaks at a slight blow with the back, flat, or edge of a sword. Now if a recruit had to cut at a faggot or bamboo with a real sharp sword and see the results of his attempt, he would correct his own mistakes, or most certainly would at once do so with the aid of an instructor. The same way a lancer could be taught to point at a tough dummy and recover his lance quickly and early. The damage to horses would be infinitesimal in comparison to the results gained. Such horsemen—men who have confidence in their horses—ride by balance and grip and can make their horses understand what is required of them, will pick up their drill at once, provided that the recruit is a man of average understanding. Formerly a commanding officer could get rid of a fool or undesirable man at once within three years' service, now his matter has to be referred to the general officer commanding. Surely a commanding officer might be trusted so far and allowed the power of ridding himself of a useless man. In the same way with the squadron, a few days' setting up drill on the above lines would obviate endless squadron and regimental drills which weary most men and prevent light cavalry duties from being practised sufficiently.

There are two factors which exercise immense power in our native army, but which are being lost sight of, lately, in some corps, the personal influence of the British officer over the men and *esprit de corps*. Of these two factors, the second is the development of the first.

Our cavalymen are not enlisted for three years like those of continental armies who have to live at high pressure to learn their actual routine duties, but for the best part of their lives, and are men who, with careful training, are the best light cavalry in the world.

The force is entirely a mercenary one, racial feelings of hatred and friendship may exist and show themselves at times, but there is no patriotism to hold men together, the one great power that exerts itself and binds and holds regiments together and is evident in times of difficulty is the personal influence of the British officer.

To obtain this influence, an officer must be taught and expected to exercise his own judgment in matters of discipline and training, and encouraged to interest himself to bring out the individuality of his men, and this individuality requires great patience and care to watch and develop. Individuality cannot be discovered on parade; it can be discovered on service which rarely occurs, and so the only thing is to encourage men in games and feats of horsemanship or anything in which they can show their gist and quality, and when a man does show it, encourage him in every way. Such amusements rarely occur in regiments regularly, and when they do, enough care is not taken to note and utilize qualities displayed.

No one can say that there is too much work now, but it is often very dull and uninteresting with a great deal of useful time wasted, and better results could be gained by less routine work and parades which make officers and men really glad to see the last of each other when the day's work is done.

Why should native officers not be employed more in routine training* and work in the lines and taught to exercise their authority and judgment in matters over which the British officers now expend much time and energy, allowing the latter to go further afield in the training of himself and his men. A great deal has been written lately about scouts for infantry, but cavalry require scouts just as much as infantry. Every man does not possess the qualities necessary to make a good scout, and a scout requires training to teach him to note and recount objects, and how to report.

*Musketry, riding school, squadron drill.

As I stated before, our men are not enlisted for three years only, and so we can afford to take things more easily than we do, relax a little on one side and add a little to the other, obtaining in the end a more useful fighting man.

Every effort should be made to encourage officers in their work, to allow them more scope for the exercise of their energies and induce them to exercise their influence over their men to the utmost and work beyond the drill book in rapid movements, reconnaissance, and individual training. If we stick to the book above, our movements become far too sedate and stately for the rough work we may be called on to do some day.

“COLD STEEL, AND INDIAN SWORDSMANSHIP.”

BY MR. P. BRAMLEY, NORTH-WESTERN PROVINCES AND OUDH
POLICE.

A short lecture addressed to the officers and men of the 5th Dragoon
Guards at Meerut on the night of the 4th October 1897.

GENERAL SANFORD, ETC.—

At the request of my friend, Colonel Baden-Powell, I will attempt to-night to tell you something about “*Cold Steel*”—especially as applying to Indian and Asiatic swordsmanship. I must however, begin, by asking you to be considerate, since, by reason, of not being, what my Babu calls a “Man-of-war” myself, I can only deal with the subject from the stand-point of the humble “Peeler,” who gets a chance occasionally of breaking a head or two, and also from that of an amateur enthusiast who dabbles in the art of swordplay as a pastime. If, therefore, I inadvertently err as to technical details, I trust you will not hesitate to correct me.

“*Cold Steel*” is at the best of times a creepy subject, and is not a pleasant one to discuss in cold blood, after one has dined comfortably and well, and I am therefore very much afraid that the grim array of lethal weapons exhibited here for your edification will give rise to a variety of horrid creepy sensations in the regions of our ribs and craniums, which will no doubt be fully appreciated by those who have ever felt the keen edge of the metal as it cleaves its way through the tissues of our vile bodies! Still, as all soldiers, and specially cavalry soldiers, must learn to *receive* “Cold Steel” with as much fortitude as they *deliver* it, a close study of the weapons that might some day be employed in making us into mince-meat will by no means prove unprofitable; since (as the generals always say) it is only by such study now in these piping times of peace that we shall be able to smite our adversaries, hip and thigh, when it comes to actual blows. And, familiarity in the use of such weapons will, I can assure you, breed a good deal more respect than it does contempt, for it gives you a correct idea of the dangers to be encountered—and therefore avoided—in a hand-to-hand fight with persons armed with them.

With us, swordsmanship as a fine art, commonly practiced as such amongst men, may perhaps, in some respects, be considered a thing of the past. But even in prosy, practical England, there are still schools of instruction wherein enthusiasts are endeavouring manfully to remedy this retrogression. That the development of the art, received a severe check by the sudden and marvellous advance in the invention and manufacture of fire-arms, there can be no doubt. But, believe me, that so long as there are stout hearts and strong arms on the face of this earth, and so long as there are warriors whose pride and valour cease only in death, there will always be a time, even in a battle against a foe, equipped with all the most modern appliances, and well versed in all modern methods of war, when your sword and your lance will play a no unimportant part.

On the Continent of Europe, and especially in France and Italy, the old schools of swordsmanship retain many of their ancient traditions, and still command respect, and exercise a proportionate amount of influence amongst European fencers, and it is from them that we ourselves have from time to time received most of our instructions. With the European system, however, I presume you are familiar—your instructors have imparted this knowledge to you—and the subject therefore need not be referred to or explained by me. But, what is a matter of considerable surprise to me and to other lovers of swordplay in this country is the fact that though no nation in Europe has had greater opportunities of studying Asiatic swordsmanship than ourselves, yet our professors have not at any time, it seems, made a definite effort to study that system, with a view to ascertaining its advantages or defects; and therefore, as a contrast to our own methods, I propose in the course of this lecture to give you a description of certain kinds of Indian and Asiatic weapons, and will illustrate the methods of using them as far as is possible, with a practical display by local native professors—trained on entirely different and in many respects totally opposite principles to our own; but which, for this very reason, is deserving of close and careful study; for the soldier, like the detective, must not only be always prepared to pick up a clue or a wrinkle when he finds one, but must be equally prompt in either adopting it for his own use, or in employing it as a means of hoisting an enemy with his own petard! And from no school of fencing in the world can you receive more instruction in the use of all *cutting* weapons than from the Asiatic school of

swordsmen with whom the use of the point or thrust as a means of attack is practically unknown.

Opinions of course differ, and in the face of such a one, as has been recorded by Captain Burton—of the “Arabian Nights” fame—it is not for me—a man of peace—to advocate the cause of oriental swordsmanship. He says, in describing swordsmanship amongst the Arabs, that the “Bedouins boast greatly of swordplay; but it is apparently confined to dealing a tremendous slash, and to jumping away from a return cut, instead of parrying it either with sword or shield. The citizens have learned the Turkish Sainitic play, *which in grotesqueness and general absurdity rivals the Indian school*. None of these orientals know the use of the point which characterises the highest school of swordsmanship: their intellect could never reach it.” (Pilgrimage to Mecca, Volume III, page 75.) This may be the case with the Bedouin Arabs, but nobody, who knows anything about the natives of India, can accuse either the Hindus or the Mahomedans therein of a want of intelligence; and therefore, however absurd some of their swordplay may seem, it will, I think, be found on close examination that their system is based on correct principles, and is in its own way a sound one, and one well adapted to the weapons with which they were armed. In some respects it is the most ancient system of swordplay in the world. Our own elaborate system has been evolved from lessons originally taught us by the Moor and the Turk: in fact, history incontrovertibly shows that it was only with the invention of gunpowder and fire-arms that the oriental nations began to disappear as military powers, and the rifle has now completely superseded the sword.

The difference therefore is that we have advanced with the times whilst they have not; though, when it comes to a discussion on “Cold Steel,” it must perforce be admitted that all our great knowledge, and all the inventions of this wonderful age, will be of no avail when it comes to an honest fight, sword in hand—man-to-man. The calm, practised swordsman will then in nine cases out of ten beat the modern prodigy who can put on a string of Bull’s-eyes at 900 yards, but who has not taken the same trouble in acquiring a similar dexterity in the use of his humble but trusty sword.

The Deputy Assistant Adjutant General for Musketry (whom I do not see here to-night) will no doubt tell you that there are numerous, and far more convenient, methods of demolishing the said skilled swordsman before he can reach you at all. This is perfectly true. You can of course shoot him, or

possibly hit him in the eye with a brickbat—or you might even bash him over the head with a barge-pole, but that is a shabby way of disposing of a chivalrous and brave enemy who may have challenged you to a fair fight in a fair field. No soldier can, properly speaking, decline so honourable a challenge, and you should therefore be prepared to polish off such opponents with your sword or your lance, with the same amount of confidence, nicety and precision, as you would display in picking him off at 200 yards with your carbine. And, in some parts of India, and in Afghanistan, and in Persia, you will to this day meet foemen worthy of your steel, with whom a passage of arms will, as old Sir Nigel Loring used to say, “Peradventure bring much Honour”!

But, in British India, swordmanship as a science received its death-blow in the Great Indian Mutiny of 1857, and the complete disarmament which followed the introduction of the “Indian Arms Act” has resulted in the gradual eradication of the old methods and the old customs for want of the weapons. And, at the present time, therefore, excepting in the Native States, high-spirited swordsmen, bred and trained in the use of their weapons from childhood upwards, can nowhere be found in any numbers. From purely an enthusiastic point of view this fact is to be regretted; but, as a wise measure of state, its wisdom cannot for a moment be questioned.

At the same time the people of India are a conservative people, who abhor anything new, and adhere to their old customs with a tenacity which is remarkable, and in all great cities and towns, even in British India, there are still recognized and properly organized “akharas,” or schools of instruction, in which the arts of swordmanship, and dagger and lance play are still carefully fostered and taught with dummy weapons.

Each “akhara” is under the superintendence of a “khalifa,” or leader; and, besides the actual instruction in the use of arms, all old forms of ancient Indian duellistic etiquette are carefully studied and maintained, and, on certain festivals in the year, all “akharas” in the town, accompanied by their drums and banners, parade in procession, vying with each other in exhibitions of swordplay, and thereby revive the tradition of the past, when the sword was a greater power than the pen.

In many of our Native Cavalry regiments also, I am informed, Asiatic swordmanship has been assiduously kept up and encouraged, though the regulations only permit of its being indulged in as a pastime. And, in the old days, the one regiment, which excelled above all others in these exercises, was the famous Rissala of “*Skinner's Horse*”—a regiment whose

historical associations are closely connected with Meerut and its neighbouring districts, and which is now once again in garrison in this cantonment; and, if old Colonel James Skinner, its founder and first chief, were to return to this earth and see the "1st Bengal Lancers on parade or in the field, his pride would to-day be as great as when he himself lead them as the finest regiment of Native Irregular Cavalry in the service of the Honourable John Company." But this is a digression.

I will now ask you to follow me, whilst I describe a few of the weapons I have selected from my collection for the purposes of this lecture. You will observe at once that all the oriental weapons on this screen, with the exception of the "Saif," and omitting of course the daggers also, have obviously been built for *cutting* only. Of swords there are, of course, very many kinds; but a detailed description of the different styles, or the particular classes of metal used in their manufacture, would entail a lengthy digression, of no interest to anybody, but a "blade fancier"; though it is as well that we should know that Asiatics and especially Hindustanis and Persians are experts in the matter of sword-blades, and many of the weapons obtainable in this country are both costly and beautiful. In fact, a close examination of these weapons here will be sufficient to demonstrate the thorough knowledge of all essential details possessed by the manufacturers. The smallness of the hilts or handles is a peculiarity which will at once strike the European expert. It is a palpable defect, but one which can, to a great extent, be accounted for by the fact that natives, and especially high caste Hindus, have as a rule either very small or very long narrow hands, and thus a grip, which seems to us cramped and confined, will ordinarily be found quite sufficient for the requirements of our Aryan brethren. On the other hand, in discussing "cutting" blades—a hilt like this has certain advantages which we cannot overlook. Take hold of this "tulwar," for instance, and you will then find that it effectually prevents any false wrist-play, whilst the bulge in the middle of the "grip" is exactly what is required to keep the fingers in a correct position for cutting purposes, and that it also enables the full strength of each finger being utilised in maintaining a firm, strong grasp of the weapon—a fact the value of which will no doubt be fully appreciated by those of you who have ever been disarmed in the course of a fight owing to your inability to get a proper "hold" of your weapon by reason of defect in the construction of the "grip" or "handle." Still the construction of this hilt is undoubtedly defective inasmuch as it is adapted exclusively for a

weapon built for cutting purposes alone. But in other respects the details of these swords are perfect. The blades are well balanced, and the metal excellent, and they are provided with scabbard clips, which answer the double purpose of preventing the blades from falling out and also as a safeguard against the edge being destroyed by friction with the wooden sheaths which would be the case, if the blades were not properly secured. And, lastly, the weapons are light and handy. Heavy swords are all very fine, but you want big men with big arms, and powerful wrists to use them, and, as natives are as a rule light and wiry men themselves, they have wisely given proper attention to this important point.

I have, however, only exhibited two tulwars, but as they are representatives of the two chief classes, on the lines of which most Indian and Persian swords are built, they will be quite sufficient for our purpose.

This is an "Irani," or Persian blade; and, as its shape and construction shows, has been specially designed for the use of horsemen; and may be regarded as the product of Mahomedan ingenuity; whilst the *Guzerati*—a lighter and handier weapon, more adopted for the use of footmen—is of Hindu origin. Its blade is broader than the other, and you will observe that it is double-edged from the point downwards to very near the whole length of the "foible." Our instructors call this the "false edge," and its use is little understood by us. The blades of both are of the finest tempered steel, with edges as keen as a razor, and a single sweep, well timed, and well delivered, by a powerful mounted swordsman, will sever the head from the body; a gash of similar severity can be inflicted with the "Guzerati," whilst the deadly "undirect" delivered back-handed with the blade reversed seldom fails to reach and disable the unfortunate and uncautious antagonist who is unacquainted with this method of attack. With us such a stroke would be regarded as "foul play," but with Asiatics it is a perfectly fair one and its advantages are recognised and admitted by both the French and the Italian schools. It is just as well therefore that we should know it too.

These are English swords. I exhibit them in order that we might compare them with their oriental comrades. This is the ordinary Tailor-made sword, which costs pots of money, and on account of the numerous number of lions and unicorns, and guns and rifles, and brass bands engraved on the blade, does very well for scoring of "Bobbery-wallahs," when one

is on escort duty with a dignatory of high degree. A sword like this produces a great moral effect and is much admired by the ladies, but there its utility ceases. This is what is commonly known as a "parade spit." It is a dainty little weapon, and it is meant for what the natives would describe as "*Dekné-ki-wásté*" (meant to be looked at) ; as a means of attack or defence, it is about as useful as a tooth-pick. This, however, is a real practical blade, and combines the advantages of both classes. It is not too heavy, but is strong and well balanced, and it can

Swords and Tulwars.

be used effectively both for thrusting and cutting, and has moreover been provided with a sensible hilt. It is the weapon which has recently been supplied to the Mounted Police of these provinces. This is a beautiful "cutting" sword, and represents the transition between the Sumatra and our own straight blades. It belonged to one of the French officers in the "Begum" Sumroo's service, and is no doubt the outcome of very practical experiments on the part of the foreign adventurers who were to be found all over India in those troublesome times. But let us hark back to the Indian weapons.

This is a "*Saif*," and, with the exception of the "*Sirohi*" swords, is, as far as I am aware, the only straight sword in use amongst natives. It is provided with a "gauntlet handle," and an Indian warrior, who fights with two of them—one in each hand—looks much like a wind-mill, as you will see for yourselves in a little while.

Saif.

These are *Daggers*. This kind is known as a "*Katar*," and this as a "*Butchwa*," whilst there are common or garden Afghan

Daggers.

knives. Daggers were usually worn by gentlemen of fashion who frequently used them in an amicable sort of way for stirring up the vitals of obnoxious persons whose removal from this sphere had been confidentially decided on. They are uncanny and unsportsmanlike weapons, and very dangerous in the hands of those expert in their use, and the natives of India have a very excellent and elaborate series of dagger exercises, of which you will receive a display to-night.

The same remarks will apply to these gruesome looking things, except that they are more commonly used by murderers of the present day, and those who prowl about in the dark, in our cantonments on the frontier, in the hopes of doing a little sentry-stabbing, deserve no mercy, and should be shot without compensation, and then trampled under foot like a beetle !

Afghan knives.

This is a "*Kukri*," the national weapon of Nepal. Its use is, however, so well known that it calls for no further comment from me. For close in-and-in fighting in the hands of a man who knows how to use it, no more terrible weapon has ever been devised. They vary in size from a foot to about two feet six inches, and you can judge of the severity of its blow when you see a stout little Gurkha cutting, with one stoke, clean through the neck of a fair sized buffalo.

This is the double pointed spear or "*Bhala*." The specimen or the screen is a Burmese one, and has drawn British blood, but it is identical in shape and form with those in use in India. As far as I can make out, it is used for attacking purposes alone, as its exercises include points to both front and rear, without any parrying or defence of any kind. It is never thrown and therefore cannot come under the same class as "*Javelins*" or "*Assigais*."

This is the Sikh "*Ring*." It is a harmless looking little weapon in itself, but, when thrown by a skilful performer, it is capable of making a most grievous and ghastly wound. It has a pleasant little dodge of ricochetting along for a very considerable distance if the ground is hard, and, if it happens to meet a man on its way, it does its best to take off his head! At the same time it forms an excellent means of defence from sword-cuts, and the Sikhs used to wear them in their puggies for this purpose.

This formidable looking "*walking stick*" is another and very ancient article used by natives in certain parts of the country for fighting purposes. It hardly comes under the category of "*cold steel*," but, as it answers the same purpose equally well, it is also worthy of an earnest contemplation. In the districts of Benares, Ghazipore, and Ballia, in these provinces, the natives excel in the use of this "*Lathi*" or "*Bana*." It is much the same as an old quarter-staff, or great stick-play, and a very similar practice is now in force, in both Italy and France, where it is employed in the army, "*partly to supple the men, for which purpose it is an admirable and highly gymnastic exercise, and partly to lead to proficiency in wielding the musket and sword bayonet.*" (Hutton.) In India, however, its exercises are specially designed to keep off a crowd of assailants with its far-reaching circular strokes and rapid thrusts.

These two "axes" are also nasty weapons in their way.

Axes. This one comes from the confines of Nepal, and is used in the same way as the "great stick." It looks very much like the old "Lochabar axe," and is capable of inflicting a terrible wound. The smaller one was much used at one time by the Bundela Thakurs, but is now to be found only amongst the wild men in the woods along the southern borders of these provinces.

This is what an "Afrikander" will no doubt at once call a "knob-kerrie." It is very like one, **Halurah-sticks.** and it is used here by certain nomadic aboriginal tribes, and it does equally well for bowling over a hare at fifty yards as it does for knocking a policeman off his horse at the same distance when he comes prying round the encampment.

Having now introduced you to the instruments of torture, it only remains for me to give you some idea of the persons who are likely to use them, and the best way of fighting them. I allude of course to single combat alone, and am now addressing cavalry soldiers in particular.

For the brave and chivalrous horseman, who leaves the serried ranks of the foe, and riding forth, boldly flings a challenge to mortal combat with sword or spear, the English soldier has nothing but admiration, and military history has shown that English soldiers have, on many occasions, accepted such challenges, and have fairly met and vanquished such proud antagonists. And, therefore, those who have given so good an account of themselves in the past may be trusted to uphold their traditions in the future. But, at no period of military history, have we been in greater need of practised swordsmen than the present; for the revolution in modern armaments has caused most European nations to forget the practical lessons taught in days when in-and-in fighting was the rule, and not the exception—a fact which has caused the modern school of military experts to discard various apparently trifling, but in reality valuable, additions to a soldier's equipment as superfluous and obsolete. Now, however much this principle may be applied to rifles and revolvers, the sword and the lance are the same weapons to-day as they were in the times of the "Iron-Duke," and though cuirass and epaulettes may at first sight appear worthless ornamentation, they were the outcome of practical experience, and had been designed with a sound object in view. The heavily embossed bridles, headstalls and reins of Napoleon's Hussars; the thick puggie and cotton quilted coats of the old Indian Irregular Cavalry, and the

stout leather gauntlet of the Dragoon, have each in their respective way served many a good horse and many a good soldier. But you have not these now, and thus the imperative necessity of your being an expert in the use of your swords and lances as your sole means, not only of attack, but also of defence, is at once demonstrated. The first thing therefore for you to do is to look to your own physical training. If you wish to be a good swordsman, you must be active and strong, without a particle of superfluous flesh, for every pound you can take off yourself will be fully appreciated by the steed which has to carry you. Now, Englishmen, in addition to having thews and sinews, possess big bones, which is rather a nuisance in its way, for not only do bones weigh such a lot, but they sometimes get broken just at the time we don't want them to break. Then again your saddlery and accoutrements weigh a good deal, and you therefore require big horses to carry you. On the other hand, oriental warriors don't drink so much beer or eat so much meat as ourselves, and are as a rule thin wiry men, on fast horses, smaller in size, but far handier than the generality of our own mounts. This therefore is the main difference between European and Asiatic mounted antagonists, and from what I have seen of them and their methods of training, it seems to me that they get a good deal more work out of their horses than we do. An Asiatic horseman's main endeavour will be to gallop and manœuvre around, until he sees an opening when he will rush in and deliver a tremendous slash. They are as a rule very chary of *beginning* the fight, and being in perfect condition, if not promptly hustled and brought to bay, can play a waiting game very well, which may end in their ultimately tiring you out, when of course you will be more or less at the mercy of the foe. When fighting such a man, therefore, *lose no time* in closing with him, and once you get into close quarters, you will distinctly have the advantage, for as a rule you will find yourself above your antagonist (unless he also happens to have a 16-hand waler); and, if you succeed in stopping the one strong stroke he is sure to deliver, a sharp quick point will probably end the fight. You will always find it pays to act up to the motto "*D'audace toujours d'audace*"—never hesitate to open the attack—strike hard and true and learn to kill and, once you get your enemies on the run, keep them on the run! But at times it is not so easy to kill the gentlemen, and then it will be necessary for you to exercise your own judgment, and you will have to consider, not only your own condition, but must also have a thought for the strength and endurance of

your horse ; you will have to patiently bide your time, and husband your strength, and keep your mount well in hand and sit tight, and keep your eyes skinned, ready to pounce down on your opponent the instant he gives you a chance, and above all you must never forget that "cold steel" must be controlled and directed by a cool head, for, when guided by a hot one, it is usually productive of disaster. In fact, some very useful lessons, with regard to the proper handling of "cold steel," are to be learnt out pigsticking, for until a man has known what it is to ride down, and fight, and slay the "unclean beast," single-handed, he does not know what it really is to kill a pig. To fight him single-handed is a very different thing to polishing him off in company with two or more equally blood-thirsty companions ; and, after getting your horses and possibly yourself badly cut in single combat, you very soon learn how the brave brute *ought* to be ridden and demolished. Amongst others, the chief lesson you learn is that it never pays to deliver faulty thrusts, and that it is always better to avoid striking till you are certain of delivering a telling thrust, unless of course it is necessary to stop the beast in order to prevent his escaping into cover. You also learn the full extent to which you should make use of your horse in either receiving or evading charges, or in coming round instantly to continue a pursuit, and you soon see for yourself that, if you wish to use your weapon with precision and effect, it is essential that you should in the first instance be a good horseman. And these are all facts which should be borne in mind when fighting Oriental Horsemen. They are brave enough, but they have not our notions of chivalry, and are heartless enemies, who, if they once disabled you, would probably proceed to take off your head as a trophy, with the utmost precision and composure, and in spite of all your earnest protestation !

But, in the course of oriental warfare, there are swordsmen of quite a different type to those I have just referred to, and who will also have to be met and overcome, and it is to some of those that I specially wish to direct your attention. To begin with, let us take the Afghan Brigand so common all along our frontiers, but, if what the newspapers say is true, it appears that he also has now forsaken his "tulwar" for a breach-loader.

In case, however, there may still be some of the old type in existence, I will give you some idea of their methods of fighting. If, when on vedette or scouting, or on any duty of an isolated nature, and when he thinks you have no supports

at hand, you see a man standing clear against the sky line on a neighbouring hill top, 1,000 yards away, suddenly leave his coign of vantage and rapidly descend towards you, you can reasonably conclude that he is desirous of cultivating your acquaintance. When about half-way down the hill, he will probably introduce himself to you with a long shot from his elegant shooting iron (a Jezail). If not hit, keep moving about and have him into the plain if possible. Watch him closely and you will see him creeping stealthily down the hill-side, from bush to bush, like a jungle cat, for they are splendid skirmishers. He will probably have a pot or two *en route*, but you must not mind that—a little further arrangement, and he will burst from his cover sword in hand, and advancing with great leaps, and gesticulations will suddenly without checking his attack whisk off his puggie and continue his onslaught under cover of its waves—a manœuvre which in most cases has a most disturbing effect on your horse for whose benefit it has been specially designed. But I hardly think such a man is worth fighting with “cold steel”—shoot him the instant he gives you a chance. Failing this, keep moving rapidly round him, and never give him a chance of closing in or hamstringing your horse. Use your lance in preference to your sword, and endeavour to strike true, so that one stroke or thrust will suffice to end the fight. Show him no mercy, for he is a cruel crafty enemy who would assuredly turn and slay you, were you weak and unwise enough to offer him the assistance you would to any wounded civilized antagonist.

Another type of man is the “Ghazi”—a fiend who rushes straight to his death, with the name of his God on his lips. He is, as his name implies, a fanatic, bent on achieving martyrdom, and he comes at you straight as an angry boar, and ends by delivering a crashing stroke at your skull or shoulders. He is not as a rule a good fencer, and his blood being up, he is always in a frightful temper, and allows his ferocity to get the better of his discretion. A strong guard and sharp return will generally end his career, but his vitality is extraordinary, and, if you want to escape an ugly mauling, kill him dead. But his acquaintance as a swordsman is not worth cultivating, and he can therefore be just as expeditiously despatched with a bullet.

The reptile with the knives I have already dealt with. For him should be reserved all the outcome of modern ingenuity in the mantrap and spring-gun line, so that he should be disposed of after the manner of vermin. But when attacked alone and unarmed by a man with a dagger, there are a number

of excellent "seizures" and "stops," which are well worth knowing, and of which you are shortly about to have an exhibition, which I would strongly recommend you to follow closely.

There remains the man with the "great-stick." His antics will at first amuse you, but beware! Watch him closely. Get him, if possible, to deliver a stroke. This you must "evade"—not guard—and then rush in before he recovers. This will be your only chance. Once you get within the dangerous zone of his sweeping strokes, he ought to be more or less at your mercy.

From all that I have now told you, and I am afraid I have kept you a good deal longer than I ought to have, you will see how necessary it is for every man who wishes to become a good horseman and good swordsman, to keep himself in good hard condition, for, failing the use of your weapons, you will then at all events have strong arms, and there are no people in the world who can use their fists with greater effect than the English. The amount of damage which can be done by a fair blow on the mouth, when a man is riding hard and has both weight and muscle at his disposal, is something astonishing, and we have an instance on record, in which no less a personage than a British General, who, when beset by a French Lancer, at the battle of Albuera, overcame his dangerous antagonist, by a good honest drive on the face, which not only sent "Monsieur's" teeth down his throat, but hurled him off his horse and on to the ground, after which it seems General Beresford went on his way rejoicing, and was molested no more.

I will now introduce to you certain local professors who will proceed to give some practical expositions in the art of using the weapons I have described. You will then be able to judge for yourselves the advantages and defects of their system, and by comparing them with your own will be able to form your own conclusions.

* * * * *

(Here the "Akharas" with drums, flags, etc., were introduced.)

The display began, with certain preliminary exercises, illustrating the methods by which the arms and limbs are trained and developed, with a view to the student becoming an expert swordsman. The "*Banetti—Exercises*"—came first, and it was pointed out that they had evidently been devised to

ensure suppleness of the joints, and that they trained a man to be "*ambi-dexterous*"—a most important item in a swordsman's training.

The "*Lezum*." For strengthening the arms and opening the chest, and for rendering the back pliant and supple.

The "*Bana*," or *double-headed* "*Banetti*," as a preliminary to "Lathi-play."

A *system of free gymnastics* was also then exhibited and explained.

This led up to the "*Sword-play*," and the following points were carefully noted:—

1. Method of holding tulwars.
 2. Method of approaching an enemy under cover of the "*Marlinets*."
 3. Five cuts—note specially the "*Coup Farnac*."
- Peculiar guards and defence*.—Agility and dexterity a great feature. Blows *avoided* rather than *guarded*, and much ingenuity displayed in guarding with shoes, handkerchiefs, shawls, etc.

The "*Saif*" exercises were next performed, and the following points were explained:—

1. Used both single and double handed, both for cut and thrust.
2. Activity a great feature.
3. Exercises specially designed for keeping off a crowd of assailants.

Spear play.—Note absence of guards—a feeble performance.

The "*Bana*" or "*Great-stick*."—Very similar to our quarter-staff, and to the continental "*great-stick*" play—exercises carefully designed.

The "*Batchwa* or *Dagger play*."—Very elaborate and scientific practices. Italian system evidently outcome of oriental instructions.

With this, the display was closed.

* * * * *

With this display my lecture comes to an end, and if the show has proved of any interest at all to my friends, my humble object in taking up so much of your time will have been achieved.

SHIKAR* AS A TRAINING FOR SCOUTS.

BY CAPTAIN R. G. BURTON, 1ST INFANTRY, HYDERABAD
CONTINGENT.

In the issue of this Journal for January 1898 a paper was printed on the organisation and training of scouts. That paper was written by me during the earlier phases of the late campaign on the North-West Frontier, shortly after the expedition against the Mohmands, and before I was aware that trained scouts, drawn from Gurkha regiments, were being employed across the frontier.

Subsequent events proved the utility of these specially-trained men, and their services were recognised by Sir William Lockhart on the conclusion of the campaign, his remarks on the subject being as follows:—"The scouts drawn from the 3rd and 5th Gurkhas proved invaluable; being trained mountaineers and accustomed to guerilla warfare, they were able to climb the most precipitous hills, lie in ambush at night, and surpass the tribesmen in their own tactics."

This eulogy of the commander of the forces in the Tirah Expedition, due to his own personal observation, is of itself sufficient to place the utility of such a body of men beyond all doubt. And this being the case, it may be presumed that before long regular measures will be undertaken, and orders promulgated for the training and organisation of selected scouts in all the regiments in India.

In my previous paper on this subject I touched incidentally upon the value to be derived from the exercise of specially selected men in expeditions for the hunting of wild animals, in addition to their being trained in their ordinary and special duties, and it would appear to me that the value of the experiences which would be afforded during such expeditions cannot be too highly stated, as calculated to promote the very qualities most desirable in scouts.

Those who have been accustomed to wander in the jungle in search of game; observing tracks; keeping a constant lookout in every direction; listening for the snapping of a twig; detecting a footfall on a dry leaf, or the twitch of an animal's

* I have used the word *Shikar* as being more comprehensive than any term is our own language.

ear in the thicket, know by experience how the senses become sharpened and ever on the alert. A novice may look in vain for an animal standing motionless in the jungle which is easily visible to the trained hunter. So much is this sharpening of the senses evident, that in some of us a new instinct seems to be born; we know, by some natural intuition, that an animal is in a certain place before we see or hear it; we look, and there it stands on the expected spot.

It is in fact not open to question that a man used to this kind of sport is more likely to be alert and intelligent in the duties required of scouts than one who has been accustomed to sit at home at ease in barracks or bungalow, for the scout should be a keen observer. The value of such experiences, both for commander and men, is undeniable. It is not the Carpet-Knight, but the mighty hunter before the Lord who is likely to prove useful in difficult and dangerous enterprises.

In an Indian newspaper I read that "it is not in the drawing-rooms of our hill-stations that those qualities best calculated to make a leader of men are inculcated and fostered." And the qualities most desirable in a scout are not likely to be inculcated and fostered in the barracks, lines, or bazaars.

I have myself been in the habit of annually taking out some half-dozen chosen sepoy on shooting expeditions, not indeed allowing them to shoot, but teaching them as far as possible the habits of wild animals, so that they might be able to assist in circumventing the denizens of the jungles, and utilising them to stiffen a line of beaters. And I have observed that those who take to this sport are usually the smartest and most intelligent men, although, owing to the classes from which I have been obliged to draw them, they are not those who have been born in and brought up to a jungle life. Such men become not only keen and alert, but self-reliant and courageous, ready to act with decision at critical moments, and indifferent to danger. On one occasion within my experience an angry tigress charged a line of beaters, scattering them in all directions; but two of my sepoys, armed in case of such an emergency, stood their ground, and shot the infuriated animal, thus undoubtedly saving at least one life. An untrained man under such circumstances would be likely to lose his head. Or I may quote the case of an officer who was seized by a wounded tiger. His orderly unhesitatingly ran his spear through the beast, thus keeping cool under such exciting and terrible circumstances. On another occasion an officer pulled a panther off one of his men

by its tail, fearing to fire lest he should shoot the man who had been attacked. Men inured to such adventures are more likely to be of use as scouts than those who sit at home at ease. One has only to peruse the tales of Indian and trapper life, written by Fenimore Cooper, Mayne Reid, and others who have drawn their incidents from their own experience, to understand the use of such men as these trained hunters.

India offers unlimited and peculiar facilities for the carrying out of *Shikar* expeditions, possessed as it is of an abundant and varied *fauna*, and of every variety of country. It only remains to encourage men who are addicted to such pursuits by granting them increased facilities for obtaining leave during the shooting-season, and by removing the obstacles that are placed in the hunter's way by the forest and other civil officials, and by the rulers of Native independent States, and by authorising the organisation of a body of men in every regiment who shall be trained as scouts on the proposed lines.

5/13/99. Capt. Has just suggested the use of
Hind's Ambulance in hill warfare.
Made a few Ambulances to be used.

AMBULANCE WORK IN HILL WARFARE.

BY AN ARMY SURGEON.

The subject to which I invite the attention of my brother-officers of the fighting ranks is one which is of as much importance to them as to the army surgeon: and a practical experience of several expeditions has led me to some conclusions, now to be stated, which may tend to clearer ideas of the mutual rôle of combatants and non-combatants in removing casualties from the hillside.

I have endeavoured to look at ambulance matters and organisation, not with a narrow professional eye, but from the point of view of those tactical necessities, which belong indeed to the particular domain of the combatant, but which a surgeon in the field will do well to consider and understand.

Yet I hope I shall not be regarded as an impertinent intruder, nor have that much abused proverb "*ne sutor ultra crepidam*" flung at me for discussing matters of the fighting line where all officers present do meet on common ground, and with a common purpose, *viz.*, the success of our arms.

From an ambulance point of view, the leading feature of hill warfare is the necessity for immediately removing our wounded and taking them with us. This necessity introduces an element in hill tactics peculiar to them and not present in civilised war: it is a necessity of prime importance, to which all other tactical objects have to give way.

The lesson is not new: it has been taught by many mountain expeditions before the late rising: but though taught, it has not been learnt, as many unfortunate affairs have shown. On some occasions during the late Tirah Expedition and elsewhere, some of our men, British soldiers and sepoys, wounded during a retirement, were left behind and killed by the enemy.

On other occasions, *e.g.*, during the defence and relief of Chitral, many cases euphemistically reported as "killed in action" or "missing" were really wounded during retirement and unavoidably left to their fate.

Still more frequently has it occurred that, although all the wounded have been brought in, it has been at a great cost. The dogged and desperate attempt to effect this during a retirement has seriously hampered the retiring force,

depriving it of that celerity of movement essential to success, and resulting in geometrically increasing casualties according to the time required to pick them up and bring them in.

Typical examples of these incidents occurred in the retirements from Maizar, Saransar, Waran, and Shinkamar, and to the 35th Sikhs in the Mahmud valley, and to the Ox-fords in picquetting the Khyber.

Commander
in Khyber
valley
wounded Owing to delays necessary to enable the wounded to be brought in, positions had sometimes to be held by small detachments, after some vital flank or rear support had been withdrawn, the concerted action on which the general safety depended being upset by the delay.

When this occurs in conspicuous instances and with striking losses, as lately, the attention of generals, commanding officers, and combatants generally is imperatively called to a matter often considered as outside their sphere. Now first aid to the wounded, as I shall subsequently show, so far as concerns tourniquets, dressings, and drugs, is a matter of quite minor importance. On the hillside it is more essential to a wounded man to pick him up and carry him off alive, than to dress his wound. The general and all under him are finally responsible for this tactical (not surgical) duty, which is of prime importance to the success of a military movement, because it alone can restore mobility to the fighters that remain.

No action of any arm or department in war is beyond the scope of a general's knowledge and supervision. Napoleon the Great was noted for the personal care he gave to medical arrangements in the field: and the most successful and trusted of our brigadiers in Tirah was noted for the same care. The minds of both these generals were wide enough to include all matters contributing to success in war; and to hold as their maxim "Nil militaris alienum puto."

Before considering the special bearing of ambulance matters upon hill tactics, it will be well to clear the ground by pressing home this undeniable fact in hill warfare that if any gross error in tactics occurs, such as in a retirement abandoning a nearer before a more advanced picquet, or a misplaced sense of dignity causing a retiring rear party to walk instead of running from cover to cover, or in an advance neglecting to crown an important height, then no system of ambulance or medical corps that can ever be devised, if the enemy take advantage of such errors (which fortunately they don't always) will prevent a disaster, a piling up of casualty on casualty,

till the force is hampered and rendered immobile, or actually abandons the wounded to their fate. This fact naturally leads army surgeons who have to be in the place of disaster to take an intelligent and respectful interest in tactics: and it is my object to show the combatant that the ambulance scheme of the surgeon is, or ought to be, of equally vital interest to him, and to emphasise the equal responsibility of both classes of officers for the tactical duty of restoring mobility to the fighting line (*i.e.*, the rank and file) by relieving it of its wounded as soon as they occur. Questions of vulnerability (*i.e.*, target offered to the enemy) in relation to offensive power make it necessary, as I shall shortly show, to employ in the fighting line only a man's fighting comrades on this service, in preference to using unarmed followers. This fact alone brings the ambulance service within the scope of a commanding officer's concern, the medical officer being merely his instrument for supervision, and in this paper it will be assumed that neither wishes to shift the burden of responsibility exclusively upon the other. The responsibility of the commanding officer covers all the field duties of his medical officer, as much as those of the quartermaster or transport officer: for the ambulance duties of the medical officer form part of the tactics of hill warfare. Commanding officers and generals, as the persons finally responsible, should therefore fully understand the capacity and scope of the various ambulance factors, and the system on which they are organised: a subject to which I shall shortly return.

Military movements in the hills, from the ambulance point of view, may be divided into three main classes:—

- (1) An advance, to be followed the same day by a retirement after effecting the object aimed at.
- (2) The retirement.
- (3) An advance to a new camp, combining the features of the first two with modifications.

(1) *Advance followed by retirement.*—Usually the first contact with the enemy and casualties occur when the valley is left and the heights ascended. This point forms a centre and rallying place for collecting casualties. The wounded are not taken on but collected as they occur (usually from the flanking parties in the heights on either side) into the central line and passed back to the rallying point: and from thence moved back towards camp with the utmost celerity, so as to free the force of prior encumbrances in its retirement.

In the advance a few minutes' delay in picking up casualties is of no tactical importance: for so long as the flanking parties are advancing, each of the wounded can be securely left as he falls with a comrade or two to help him.

(2) *In a retirement* casualties have to be immediately picked up and carried back, as the ground on which they fall is immediately conceded to the enemy.

No delay is permissible for dressings or other non-essential procedure, until the zone of fire is passed. The only permissible delay beyond the ordinary tactical requirements of the retirement is of the covering party, not of the encumbrance: as when a rear party holds on to a suitable position for a few minutes longer so as to enable the wounded and their bearers to get well ahead and to prevent the enemy from getting within short range of the encumbered bearers. It is quite clear that men carrying wounded cannot move as fast as disencumbered retiring parties: consequently the only way in which casualties can be got out of the way at the same pace as the disencumbered rifles move is to utilize all the temporary halts of a ridge to ridge retirement and to pass them on without stopping, the retirement of the wounded being a continuous movement of independent units through all other parties to the camp. The disaster to the Northhamptons on November 9th, and possibly other incidents attended with loss, may have been due to this principle not being strictly carried out.

(3) *In an advance to a new camp.*—Casualties must be cleared towards the centre, as at first described: but in an advancing, not a rearward direction; and may sometimes with advantage be taken on with them by their own corps, until a suitable place for leaving them to await the arrival of a bearer company is reached.

It must be remembered that in hill warfare, when a wide area of rugged ground is traversed by flanking parties, there can be no searching for the wounded by an ambulance corps as practised in the plains. All that the bearer company can do is to gather up the wounded brought into the central line by the comrades of the wounded, each regiment being responsible for the primary collection of its own casualties, and for handing them over to the bearer company when met.

In the present case the time for succour, for dressing, for removing to the centre and halting there, will be much shorter than in the previous case. Casualties must be swept on, or they will hamper what will eventually resemble the rear-guard of a retiring action.

Before considering the ambulance organisation best adapted for hill warfare, we must consider what are the general objects of hill warfare and hill tactics, and how do they differ from warfare in the plains.

I cannot help thinking that our severe losses in the hills are often due to our using stereotyped tactics aimed at getting a big bag in situations when a big bag is practically impossible. Even in warfare of the plains, where a big bag is a reasonable aim, it cannot be got without a necessary and inevitable sacrifice of life on our side : but here the conclusive results of a big bag justify this sacrifice. But if in hill warfare big bags are very rare or impossible (as experience proves), then it follows that the tactics adapted for a big bag are out of place, and that the sacrifices required for the big bag are unnecessary and to be avoided.

The four practical objectives of hill warfare, *viz.*, to examine ground, obtain wood and fodder, destroy dwelling places, and occasionally to evict the enemy from the heights for "izat," can usually be attained at a trifling sacrifice, provided no mistaken efforts after a big bag are made, which Pathan hill fighters can with ease evade and make to recoil on our own heads. The point I wish to submit is that for these, the only practicable ends of hill warfare, it is not necessary or inevitable to incur appreciable losses : an important point when we come to consider the striking and far-reaching effects of even a few casualties in the hills on the mobility of a force and its general success.

There are three important tactical desiderata in the hills which have a special bearing on ambulance matters. These are—

- (1) To maintain the greatest possible mobility in a force.
- (2) To maintain a low vulnerability, *i.e.*, to offer the most difficult target to the enemy.
- (3) To maintain the greatest offensive power in proportion to the target offered.

A low vulnerability and a maintenance of mobility are both only to be attained by very rapid removal of the wounded by their nearest comrades in the directions already specified.

In civilized warfare a large number of casualties in itself does not affect, or at any rate prevent, success in a tactical operation, because those casualties can be left alone till the tactical operation is completed, and in case of failure may be still left to the humanity of the enemy.

In uncivilized warfare, on the contrary, and most of all in the hills where the removal of the wounded is necessarily slow and difficult, every casualty is a direct additional bar to the general tactical success owing to the necessity for carrying them hampering the mobility of the force.

Consequently, unlike all other war-like operations, it must be a prime object of a commander in the hills to avoid casualties: a tactical aim not sufficiently understood by many officers owing to their exclusive training in civilized war when a few casualties more or less make no difference to the mobility of a force.

The tactical necessity for avoiding or minimizing casualties is highest of all in the case of retirements, where it ought to take precedence of almost all other considerations.

In short, those inflexible rules of height crowning, that exactitude in the order of return, and the immediate picqueting of the heights around an encamping ground by the advanced guard, on which a wise commander invariably insists, instead of being counsels of timidity as thoughtless critics sometimes assume, are due to a practical acquaintance, not only with the immediate dangers of mountain warfare, but with the far-reaching tactical consequences of casualties in the enemy's country, the accumulation of which, even inside a camping ground, may destroy the mobility and offensive power of a brigade, as happened at Inayat Kila.

How should the wounded be removed?—Invariably by their nearest comrades, whose duty it is to carry them in the direction of, and until they reach, the bearer company with its dandies and ponies.

There are and must be two lines or stages of removal for the wounded, both equally essential and contributing to form one system whose object is to disencumber the fighting line with the utmost speed without increasing its vulnerability or diminishing (relatively to its number) its offensive power. The first line is the nearest comrades of the wounded man, the second line is the bearer company consisting of unarmed followers with dandies and ponies. It is a matter of great tactical importance to use the former to the utmost extent, and to minimize the latter, for reasons shortly to be shown.

Non-combatants should not be employed in the first line of ambulance.—When bearers are most urgently required, e.g., in a retirement, when the necessity for immediately freeing the fighting line of encumbrances is most pressing,

the presence of non-combatants is a dead weight and a hindrance, and tactically unallowable. Apart from this, it should be known that in modern civilised war bearer companies are not designed to carry off the wounded under fire; but to carry them off after the action is over. It is true that giving temporary succour under fire is also theoretically aimed at (not carrying out of fire, be it noted): but this work is very meagrely possible during the action: the other is their tactical object and *raison d'être*. It is assumed that whichever side wins, the field will be in possession of a civilized power which will not disturb their ministrations.

In the hills all of our people, whether fighting men or bearers, are equally the objects of injury and destruction by the enemy, and whether our tactics succeed or not, the field is invariably left before nightfall in possession of this uncivilized foe. From these facts a natural inference follows that, in hill warfare, there is no *locus standi* for the non-combatant ambulance corps of civilized warfare, at any rate, in the fighting line.

This inference is enforced by the example of our Afridi enemies.

Although I believe each of their marksmen was often attended by a few sword and stave bearing friends to save him and his rifle if injured, we may be very sure that none of these followers would be unarmed save for simple lack of rifles or ammunition. The idea would be totally contrary to the common sense of hillmen, all of whom can use a rifle and are of the same martial caste.

Yet we deliberately place unarmed kahars, with no offensive powers, to become a target under fire while carrying the wounded on bad ground: a task that will severely try the strength, work and discipline of trained soldiers, and ought not to be expected from unarmed, undisciplined, slender-bodied and constitutioned followers. The tactical advantage of using only armed men as bearers is easily demonstrable. To take an example, *reasonable provision* for a company of one hundred rifles, for 10 per cent. of casualties such as may occur in a tight place, requires 40 bearers, themselves requiring an additional 16 bearers for 10 per cent. of their own number: so that you get a force of 100 rifles with 60 unarmed men to protect, hampering it *ab initio* and lessening its free mobility.

Its original offensive power is equal to that of 100 rifles without encumbrances: its vulnerability is $1\frac{1}{2}$ times, and its mobility about $\frac{2}{3}$ that of an unencumbered force: and every

fresh casualty increases its vulnerability and diminishes its mobility in a high ratio.

Sir E. Collen, in his recent speech at Simla, said : " It must be remembered that in mountain warfare, as your numbers increase, your mobility and real security decreases." If this is true of fighting men, how much more is it true of followers, or fighting men, mixed with followers? If, therefore, you must start with 160 men, why not start with 160 armed, instead of 100 armed and 60 unarmed, getting thereby with equal vulnerability, superior mobility and increased offensive power?

In a force retiring with its wounded, every disciplined rifle-using man is so much gain : every unarmed man (equally liable with the armed to get wounded and have to be carried) is so much dead weight and loss. The number of bearers for possible casualties, if you rely on the fighting men as bearers, is limited only by the total strength of the force-unwounded. The only means of having always the right proportion of bearers to fighters handy is to consider every fighter as a bearer, and you thus attain for all strengths a maximum of offensive and carrying power in proportion to vulnerability.

Other advantages follow on this principle.

By a man's comrades acting as his bearers, he is picked up at once and time saved that may be of vital importance in preventing a block at a critical stage.

His bearers, instead of being of an unwarlike caste, undisciplined and small in physique, are his armed comrades, disciplined, and strong in physique and training. Their extra strength compensates for the disadvantage of their having to carry the extra weight of slung rifles. Their four rifles are of incomparable service in keeping the enemy at a distance, not only because they can set their burden down at any time and shoot, but also by the moral effect they exercise in discouraging a nearer approach, as compared with that tempting pray, a knot of laden unarmed kahars.

With kahar bearers a guard is required to accompany and safeguard the wounded while in the field, and the dispositions of the whole regiment have sometimes to be made so as to cover and assist them : whereas soldier bearers are a guard in themselves and liberate the rest of the regiment for the tactical necessities of the day.

From the point of view of discipline and order, the advantage is equally great. As a man falls, his nearest companions are told off by his company or section commander to pick

him up, and all subsequent movements of the wounded man are made, not in a disorganised scramble, but under direction from officers and non-commissioned officers, just as any other movement in the field would be.

Anyone who has experienced the difficulty, confusion, and disorder of getting loaded followers to move under fire, and the feeling of anxiety as to all who are out of one's actual sight, the fear that they may be halting or wandering astray on the hillside, will appreciate with me the importance of having disciplined men for the work. The surgeon cannot be in all places at once: often, owing to the extended order of the party, he may be widely separated by intervening nullahs and hills from the point where a casualty occurs. Now, if the bearers are always to be the injured man's comrades, all ranks will be concerned in carrying out the removal, will recognise it as part of their military duty, and will not lose time by waiting for the surgeon or kahars.

We argue for no special body of soldier bearers in the firing line, which would involve numerous complications, being mixed up in regiments and under no immediate control: a special body is quite unnecessary, for (as I shall subsequently show) any sepoy or soldier can carry a stretcher or blanket or a corner of a wounded man, and should be taught to do so.

Can a man's comrades be spared to act as bearers?—I venture to think that those who answer this question in the negative attach too much importance to mere numbers in hill fighting. In hill warfare it is not usually the mere number of rifles at any moment in action that determines success or failure. Witness the frequent spectacle in the Tirah campaign of a dozen or two of Afridi rifles suitably placed on the heights, annoying, hampering, or even paralysing an entire brigade. Applying the lesson to our own force, it is the tactical disposition of our riflemen in suitable positions of advantage, their steady maintenance of cover when possible, and their celerity of movement, not their gross numbers, which will enable them to check or inflict loss upon the enemy. Even our smallest picquets and flanking parties are composed of compact bodies of rifles, and consequently it is of less importance, from an offensive point of view, that one-half of them should be temporarily placed out of action by carrying their wounded comrades, provided no tactical mistake has occurred. For even a few rifles are sufficient to keep an enemy less favourably placed in check upon the hillside. The outcry raised against the temporary

putting out of action of riflemen employed in carrying their wounded comrades is illogical: for the more promptly the wounded are removed, the sooner will the remainder be able to act with effect.

In fact, it is not the temporary diminution of offensive power, but the necessary exposure of a knot of valuable lives to fire in a tight place, which is really deplorable. This, however, is the inexorable penalty for the previous tactical error that created the tight place, and cannot be avoided. Having coolies or kahars to carry the wounded would in no way mend matters.

Lastly, it has in fact become usual, owing to these fundamental objections to non-combatants in increasing the relative vulnerabilities of a force without increasing its offensive power, to take as few kahars as possible into the field, and especially into the fighting line.

In actual fact, armed men, after the first few casualties, must be and always have been employed in carrying casualties: so that our principal argument is universally admitted in practice, if not in theory.

One word more on an allied question.

The importance is well appreciated by experienced hill commanders of co-ordinating all movements by previously instructing all officers, from subalterns onwards, in the object and method, of the days' operations: so that each shall act like an intelligent being, especially as to the time and order of his individual part in it. Similarly, a medical officer, whether regimental or staff, could usually co-operate much better in having his dandies and stretchers at the right place, if he were similarly taken into confidence as to the tactical dispositions of the days in which he also may have to bear an important though subordinate part.

Removal of the wounded by a surgeon not necessary.—

There is a mistaken but deeply planted notion in the minds of officers that a specialist is required to tend and remove a wounded man from the field, and that the ordinary soldier owing to his ignorance cannot attempt to do this without danger to the injured man. On this point our friends the Afridis are more practical, not considering themselves unfit to tie up a wound and remove its victim as quickly as possible from the field. Old-fashioned meddling surgery is largely responsible for the belief in the efficacy and necessity of a surgeon's immediate ministrations to a wound. It was once the custom to finger, probe, and explore, as soon after the

infliction of a wound as possible. It was also believed that amputations performed at once before the shock of the original injury had passed off were better borne and more likely to be successful.

In the present day, however, a most beneficial conservative system of surgery is the rule, and amputations are rarely performed.

It is now good surgery *not to touch* a wound, if it can be helped. The apparent paradox is true that the more you neglect a wound at first, in the sense of not handling it, the better will be its chance of eventually healing well.

Unassisted Nature herself checks and soon completely arrests the flow of blood from a wound in all but mortal cases: she also glazes over the wounded surface with the best material for excluding germs and promoting the healing of the wound.

The simple application of a pad of tow (carried by every soldier) to exclude dust and dirt is usually all that is required in the first instance: and even this may sometimes be dispensed with without harm.

The importance of appreciating this fact is seen in two directions. When a casualty occurs in a flanking party in bad ground, the medical officer may be in another part of the field, and valuable time be lost by waiting for his arrival. Again, in the absence of a medical officer, the same exaggerated estimate of the need of first aid has sometimes led combatant officers to waste time under fire by laboriously pulling off clothing or coats to apply a first field dressing at a critical moment in a retirement: whereas each casualty should have been immediately picked up by two stout soldiers and sent to the rear at a run, disencumbering the fighting line of impediments, and getting the whole party out of a tight place before it becomes a little shambles. Delay for makeshift dressings only complicates a difficult position and increases casualties: first dressings being little more than eye-wash, useful in covering up the blood and hiding the ugly sight from a man's comrades. The tactical duties of a combatant officer include the removal of his wounded: a duty not to be delayed in order to do surgeon's work which can wait. In short, mobility should never be sacrificed just when it is most required by squeamish delays in moving a wounded man. He will have to be moved, and the sooner the better: he will eventually be dressed, and a little later is not a matter of serious consequence. In a retirement this urgent necessity for mobility

overshadows and outweighs all minor considerations as to the temporary comfort of the wounded man, or the earlier or later dressing of his wounds. During an advance dressings may be more legitimately applied owing to tactical halts and delays unconnected with the impediment caused by a casualty. But even in advances, so long as movement is uninterrupted, a regimental surgeon should, as a rule, leave dressings alone, provide merely for the removal of casualties to points of cover where the bearer company will reach them later, and himself hurry on to keep up with the advancing line.

In pitched battles, such as occurred in the Soudan, with our army concentrated in a square on an open plain, the immediate skilled dressing of all wounds is a practicable operation, all points being easily accessible to the surgeons, and no tactical sacrifices or delays being demanded by this procedure.

In hill fighting the conditions are totally different, demanding a different procedure, governed by the tactical principle already discussed of avoiding the multiplication of casualties by avoiding delays. The one and single duty of all ranks towards the wounded is simply to remove them rapidly from the field to camp.

In any case, advancing or halting, no cases should be dressed under fire where cover is at hand: this procedure being tactically unsound, because it courts further casualties.

For example, at Nilt in 1891 where a long halt occurred in an attack, the wounded were dressed within a few yards off where they fell, but all under cover.

If no cover is available, dressings may be applied during a halt under fire, to fill up the time, and to encourage all ranks, wounded and sound alike. This was done, for example, at Nisargol in 1895.

Hæmorrhage.—There is a widespread idea that a wounded man may die of bleeding if a surgeon is not near. Yet the fact is that, when dangerous hæmorrhage occurs, it kills in a few minutes long before a surgeon can do any good.

Even if a surgeon be on the spot, a really dangerous hæmorrhage must often be fatal. In the attack on the Sampagha pass an officer was hit in the groin, with a surgeon standing by his side. In spite of perfectly skilful and immediate attention, he died from hæmorrhage in a few minutes.

I have seen at the time of infliction a good many wounds of varying degrees of severity: barring cases rapidly and inevitably mortal, only one bled to any alarming extent. It

was a gunshot wound of the jaw. I stopped it by a pad inside the mouth and tying up the jaw, causing the m^{en} to bite on the pad. /a

It is, I believe, a rare incident for a gunshot wound to occur where the accidental presence of a surgeon has saved life. Most supposed cases are a delusion of both patient and surgeon, who reason that because the hæmorrhage was stopped the life was saved: a simple but imperfect piece of logic when the natural tendency of even alarming hæmorrhage to cease spontaneously without danger is borne in mind. Equally rare are those cases where the surgeon's absence has resulted in a death that might have been avoided. The exceptions to these statements (such as a well-known case at the Malakand last year) only emphasize the little-known truth of the general rule here stated.

In any case it is important to remember that even an unskilled person can do nearly as much as a surgeon to check hæmorrhage, by placing his finger on the bleeding point in the wound and pressing hard: a step, however, not to be adopted except in dangerous bleeding, as it may introduce dirt into the wound.

By this, the simplest yet the best surgical means of immediately arresting hæmorrhage, the blood pouring from even a large vessel can be temporarily but completely controlled. If the vessel is small, a few minutes of this pressure on the bleeding spot will permanently stop it.

If after a few minutes' pressure it still bleeds, neither surgeon nor unskilled person need waste time by holding on: but should firmly plug the wound with any clean material handy (such as a first field dressing pad), and maintain the pressure by a stone firmly compressed against the pad by a bandage, or by any other device that occurs to him.

Examples of wounds healing well without immediate treatment.—I have seen a good many wounds at various times, by Martini, Snider, or round bullets, including three perforating and one penetrating, wounds of lung, heal up with nothing but a first field dressing applied on the spot and never removed for days.

Again, after an expedition a few years ago, I had opportunities of visiting and inspecting a large number of our late enemies who had been wounded a month before by our fire, Martini and Snider.

The majority had healed up kindly under unskilled native dressings, and one man had six holes in him (by three

perforating Martini wounds), all completely healed up in less than six weeks.

In Chitral an officer was wounded in the back at Reshan, and his wound healed in a few days without any surgical assistance, he being during most of this time a prisoner in the enemy's hands.

In the same campaign another officer and eleven men, all wounded at Karagh, remained for several days without surgical assistance, yet all healed well.

In the fight, before Chitral was besieged, Jemadar Rab Nawaz Khan, a Native Political Agent, was fearfully cut up with swords and left behind in the retreat.

He lived through the night untended, and was next day assisted by a friendly enemy and enabled to get into the fort. His wounds healed rapidly.

In the attack on the Malakand a Sikh sepoy had his shin-bone shattered by a bullet, and was in the confusion of night left behind when the picquet to which he belonged was driven in. He crawled under some cover and lay all night concealed amidst the enemy, and was only found and brought in next morning. His wound appears to have suffered no detriment by being left so long unattended.

In the fighting in the Mahmud valley on September 16th many of the wounded from the various scattered parties could not be dressed until they reached camp several hours after being hit : and those wounded with the general at the village of Bilot were out all night before they were brought in and received surgical aid : apparently without ultimate harm.

These few examples from facts known to the writer illustrate the general statement that no appreciable harm results from non-mortal wounds being left for some hours without surgical treatment. It is in the *later* stages of treatment that surgical skill is more required to prevent avoidable complications dangerous to life or permanent defects which might have been corrected in time.

The object of these remarks is by no means to liberate the surgeon from immediate attendance on the wounded under fire, which will always be his duty : but to impress on combatants generally that this ministration is not vital, and that it behoves each one of them also to be ready, for important tactical reasons, to include in his military duty the painful but soldierly task of removing the casualties of his party.

The conditions of war incompatible with over-specialization.—I hope the above considerations will have made it

clear that the conditions of war in the hills make surgical treatment in action usually inexpedient, where it is not absolutely impossible.

To the question, what then are the duties of the surgeon in action, I will reply, if permitted, in the second part of this paper. Here I will only offer a few concluding observations on the conditions of war: the application of which to medical organization and ambulance matters will be easy to make.

When Wordsworth, in his picture of the good warrior described him as a man,

" Who with a natural instinct to discern
What knowledge can perform; is diligent to learn :
Who through the heat of conflict keeps the law
In calmness made, and sees what he foresaw ;
Or if an unexpected call succeed,
Come when it will, is equal to the need"—

he meant that a soldier must be a man of many trades, prepared to act at all points, and that self-completeness and independence of specialized aid must be his mark. At any rate, this is the point to which I now wish to invite attention.

The specialization and exclusive subdivision of labour is a characteristic feature of modern peaceful life.

It is familiar to us in Europe in our workshops and trades and in India is one of the features which has probably contributed to make Hindus for centuries the easy prey of foreign invaders. It is a condition incompatible with successful war.

The primitive man did, as our hill enemies still do, everything for himself and was as little dependent on his neighbours as possible.

Now an army in the field resembles a primitive, rather than a modern settled state, and requires every one of its component individuals to be, first and foremost, either a rifleman or a leader of riflemen, whatever other specialized skill he may possess that contributes to success in war.

The following peculiarities in the conditions of an army in the field strictly limit the scope of its subdivisions of labour as compared with a settled state.

It is not a natural and permanent but an essentially artificial and temporary aggregation of individuals, not for all the purposes of civilized life, but for the single and occasional purpose of war.

Unlike a settled state, the army has no geographical limit or fixity of location, but is and must be a moveable and moving organism, acting under strange conditions and often in a foreign climate and often in unknown desert country.

Lastly and especially it is irregularly subject, at times no man can exactly foresee, to violent crises, disturbance, confusion, variations in numbers, isolation of its parts, and diminution by losses by battle or disease.

No one who reflects upon the late march down the Bara valley will say that the characters here summarised are imaginary.

A *sine qua non* of a machine so constituted and exposed to such vicissitudes is to have all its parts simply made of robust materials on a uniform plan, easily replaced, and easily interchanged.

A very rigid, delicate, and highly specialized machine could not stand these rough and ready conditions without breaking down and occasionally becoming useless.

This metaphor briefly and accurately describes the necessity for simplicity and self-completeness in every living unit of an army: they are the prime conditions of that freedom, mobility and power on the hillside which military administrators are always striving to attain. I deduce to corollaries from this principle. First, to minimize or avoid the use of non-combatant specialists or followers, who lack the first essential of military self-completeness, namely, the power of offence and defence: and to make combatants shift without them or take their simple duties upon themselves. Secondly (what is merely a different aspect of the same conclusion), let your specialists be in every respect, and primarily, also soldiers. Every non-combatant unit in an army, and especially aggregations of them, are weak points in the military chain, flaws in the steel blade, bound to give way under violence, and especially liable to break under any unusual strain: and war is full of unusual strains. In old days the army of followers was often twice as large as the fighting force, but every effort of late has been made to reduce it till now its numbers instead of being double are rarely equal to that of the fighters. By strictly confining the services of those still found necessary to roads and camps, our brigadiers and regimental commanders can be relieved of a great care, and enjoy a freedom, mobility, and power in action otherwise unattainable. On the other hand, whatever other skill a man in action may have (*e.g.*, a doctor or bearer), he ought first and primarily to be a soldier.

Every Afridi is a fighter, but he is also every one of the special departments in himself—his own sapper, doctor, transport, commissariat, armourer, cook, bearer, and sweeper.

Imagine the invincible strength, mobility, and self-sufficiency of any civilized army, or brigade, or single regiment, if it could reasonably be so constituted.

The hindrance of over-specialization, or dependence on others, is especially seen in our wars in uncivilized countries, mountains, and deserts, with a savage foe, recognising no particular rules to the game, and himself unfettered by dependence on special departments.

Among primitive races it is the constant presence of violence, isolation, and movement, that necessitates each man being self-sufficient for his own wants and independent of his neighbour. So even in a civilized army, the temporary return to the primitive conditions of violence, occasional isolation, and continual movement necessitates a return in some measure to the individual self-sufficiency of primitive men.

Every day experience of frontier wars demonstrates this necessity: and its principle is already widely adopted in the army. Followers and non-combatants are cut down. Fighting men are used in various specialized capacities: *e.g.*, as clerks, cooks, ward-orderlies, signallers, telegraphists. Entire corps, previously non-combatant, have been converted into trained soldiers, retaining their specialized function unimpaired. So too each fighting unit is taught to be self-sufficient beyond his particular arm. The infantry man saps and makes field works: the sapper shoots: the trooper learns dismounted tactics: all arms assist in transport and commissariat work, many learn some veterinary work, and all learn, or ought to learn, the simple principles of doctoring so far as first aid and ambulance is concerned.

The temporary isolation of small parties, it may be noted in conclusion, is a feature almost peculiar to hill warfare, owing to the deeply seamed and rugged surface of the field of action.

Illustrations of the effects of this will readily occur to the imagination or experience of all. Thus if a combatant and a medical officer are with an isolated party and one of them is disabled, the combatant must temporarily become a medico, or the medico a combatant. This has not infrequently happened.

Here is another example. At Nilt in 1891, when the only sapper officer was disabled, his place was filled, firstly, by a

civilian, and afterwards by a pioneer officer. At Mastuj in 1895, in the absence of the only combatant officer on an important reconnaissance, at the beginning of the war, a commissariat officer assumed command. The writer, in common with most army surgeons, has occasionally been in command of a wounded convoy with its escort: and on one occasion accompanied a small party to the relief of a hard-pressed outpost, and, owing to his combatant comrades being delayed by tactical duties, was in command of the first party that arrived at the outpost: fortunately without encountering the enemy.

These are a few examples from personal experience of this peculiar feature, the isolation of hill warfare and its effects: illustrating the necessity for self-completeness in all ranks and spheres, the advisability of all officers even of departments like the medical being made primarily soldiers, and the anomalous position of so-called non-combatants in war.

So much for general and theoretical considerations. In the second part of my paper I will consider the practical features of ambulance work in hill warfare.

(To be continued.)

SHOULD CORPS ARTILLERY BE RETAINED OR SHOULD THE COMBINED ARTILLERY BE DISTRIBUTED AMONG THE DIVISIONS.

(Contributed by the Intelligence Branch.)

FROM THE "MILITAR WOCHENBLATT" NOS. 107 AND 108 OF 1897.

A careful study of our last war shews that an infantry attack pushed forward with the greatest energy cannot succeed, until the enemy's artillery has been either destroyed or partly brought to silence. This experience is of still greater importance now, owing to the progress in arms, smokeless powder, longer range and greater rapidity of fire. The Field Artillery Drill of 1892 in paragraphs 320 and 329 prescribes that in the attack as well as the defence the whole artillery as a rule is to be utilized in order to obtain a superiority of fire over the enemy at an early stage. In this way our modern tactics have been freed from the notion of keeping back a mass of artillery, and now all available guns are to be brought up for carrying out the artillery duel.

To attain this, the artillery is now in all armies distributed among the army corps, with the exception of horse artillery which is attached to the cavalry, and heavy artillery which co-operates only in the attack of fortified places. In the army corps there are two kinds of artillery, the divisional artillery with divisions, and the corps artillery directly under the orders of the commanding general. Russia alone makes an exception, for *in case of war* the whole artillery is equally divided among the divisions.

Considering the above drill regulation for the employment of artillery in battle, should then the artillery be allowed to stand as at present, or be distributed equally among the divisions? Some authorities, like Hohenlohe, Schlichting, Boguslawski, Schell, Meckell, wish to retain a separate corps artillery, whilst others like Scherff and authors of publications in the Löbell's Jahresberichte and in the Militär Wochenblatt wish the artillery of an army corps equally distributed among divisions.

The first named authors regard the corps artillery as a means by which the disadvantages of the separation of the

artillery among the divisions can be avoided. The commanding general can assist the divisions in a fight by means of the corps artillery which would be of the greatest importance at the decisive point.

The importance of the principle of employing from the beginning a superior number of guns against the enemy is acknowledged, and it is asserted that this principle is carried out by placing the corps artillery at the head of the marching column, whence it can be brought up to that part of the battlefield where it is most required. By distributing the batteries of the corps artillery among the divisions, it is said a connecting link would be removed, without which the corps commander would appear to be powerless and therefore superfluous. Against this conclusion it is urged that the maintenance of corps artillery is alone justified by the ever-increasing armies, otherwise the number of independent commanders under the orders of an army commander would become too great to be directed during the operations and in the battle by one commander. The opponents of corps artillery only admit its existence to be justified in those cases where the tactics of the battle appear to demand the setting apart of an artillery reserve. But as the keeping back of such a force has long ago been accounted a tactical mistake, they propose to divide the corps artillery equally among the divisions.

A short account of the reasons which led to the separation of the corps artillery appears indispensable here.

The various ways of employing artillery were originally brought about by the calibre of the guns. Light guns accompanied the battalions, whilst the heavier and less mobile guns had to remain united in battery positions. At first guns were of different calibres, but gradually guns of uniform calibres were introduced, and Napoleon employed his artillery in a more uniform manner by abolishing the battalion guns and uniting them in larger batteries. Besides this he was the first to point out the importance of the battle reserve. As soon as the weak point of the enemy's position was known, he sent the artillery of the corps which he held in reserve—he never had a special artillery reserve—at a sharp pace towards the position about to be assaulted in order to direct an overwhelming fire against the enemy at short ranges before his guards rushed forward to the assault.

In regard to the short range these tactics were excellent. After the introduction of rifled ordnance with longer ranges these tactics became inapplicable. The artillery now commences its introductory activity, which decides the fate of

battles, at distances at which the infantry is as a rule forced to remain inactive. Keeping back or sparing any artillery must be accounted a serious mistake; for an artillery mass attains the less effect the more extended the object is, against which its fire has to be distributed, *i.e.*, the more artillery is employed against it from the first.

Nevertheless the lessons from the Napoleonic battle tactics remained valid. The formation of a general artillery reserve of 128 guns with the Austrian North Army, as well as of an army reserve artillery of 16 batteries with the first Prussian Army, and also of a special artillery reserve in 1870 with the French Rhine army, showed that tactics had not advanced with the progress made in arms.

After the experiences of the war of 1866 Prussia altered the formation of the artillery, and in place of the reserve artillery created the corps artillery as a special body of troops at the disposal of the commanding general, to be employed, not towards the end of the battle, but before the infantry became decisively engaged.

The origin of the corps artillery can thus be traced to the Napoleonic epoch, yet it remains questionable whether this formation would have been introduced if historical developments had not occurred. The idea of employing the greatest possible number of guns at an early stage has only gradually come to the fore. By the express separation of corps and divisional artillery it was no doubt intended to employ them differently. The defenders of corps artillery demand that the divisional artillery should always remain with its own division and co-operate with the infantry of its division in its task, whilst the corps artillery should be independent of any particular body of infantry and should be employed against that part of the enemy's position where the greatest results can be looked for.

The circumstances of the fight are more arbitrary than all rules laid down. The tasks allotted to corps and divisional artillery will not be able to be distinguished in the battle. The maintenance of both bodies of artillery in the majority of cases will probably be an evil.

As the corps artillery should have come into action before the mass of the infantry has become engaged, it necessarily follows that there must be a certain amount of competition between it and the divisional artillery. The consequence is that these bodies of artillery get mixed up, fire discipline cannot be so well maintained, and there must always be some difficulty in replenishing the ammunition. In regard to these disadvantages the question is whether it is still advisable to place a special

body of troops under the orders of the commanding general.

The Field Artillery Drill says under paragraph 263: "As a rule the field artillery will commence the action. At the same time in most cases it is important to employ a superior number of guns from the beginning and thus to obtain an advantage over the enemy at an early stage," and again under paragraph 319: "In order to carry out the attack it is of the greatest importance that the enemy's artillery fire should be kept down."

These views appear to favour the separation of a corps artillery, but the advantages ascribed to this formation disappear on examining the circumstances actually occurring in war.

It is unnecessary to examine offensive or defensive battles that have been previously planned, for in them the greater part of the artillery must be placed ready in position before the battle. All differences and deficiencies in the existence and employment of corps and divisional artillery are then hardly noticeable. But it is otherwise in the *rencontre* battles.

These battles are caused by the meeting of two columns on the march. To the artillery falls the task of gaining time and securing a position by employing as little infantry as possible in order to give the commander of the troops great freedom of action.

In *rencontre* battles, army corps will have to come into action, as a rule from a single marching column, seldom from two. In the former case, the whole of the artillery will be pushed forward at a sharp pace. The only difference between the two cases would be the preparation of orders for 3 or 2 units, depending on whether there was a corps artillery present or not. Only in the case where the corps artillery is placed behind the artillery of the leading division on the line of march, can a larger number of guns be brought earlier into action, than if the whole artillery were distributed among the divisions, but in no other case.

Besides the disadvantage of wedging the corps artillery (which occupies nearly $2\frac{1}{4}$ miles on the line of march) into the leading division, there is the great separation of the leading infantry brigades, and the difficulties attending proper measures being taken for billeting and supplying the corps artillery. In order to keep the division together after the march, the commander will endeavour to place the corps

artillery outside the circle of his troops. The consequence is that a great amount of room is taken up, whilst the great size of modern armies require great saving in space. In most cases too, the corps artillery will be placed behind the division. In case of an advance, due to an alarm, the corps artillery would arrive too late and in any case later than the divisional artillery. But if the corps artillery is quartered in the circle of the division, it will be impossible to keep its units together, and the troops of the division will then also be spread over a wider area. At all events these dispositions will always be unwelcome to the divisional commander, as they will create difficulties of supply and delay the troops when marching off.

If the corps artillery marches between both divisions, then as a rule it will come late into action. The divisional artillery, which looks to its own task only, would occupy all available artillery positions without regard to the corps artillery, whose commander would then have to search for ground where he could employ his artillery.

That the corps artillery would ever march behind the army corps in the neighbourhood of the enemy appears so impossible that a discussion on this point is unnecessary.

If an army corps marches on two roads, the corps artillery would generally use the better of the two roads allotted to the divisions, except on rare occasions when the enemy was close at hand and where tactical considerations predominate. If the two columns meet an enemy, it is at once seen that the corps is very unequally divided. It is questionable whether the division to which the corps artillery is attached will be able to employ the whole artillery. If the whole corps artillery cannot be used by this division, then the other division will be placed in a critical position from the start, and it will depend entirely on the nature of the ground whether the corps artillery can be brought up to support it in time to prevent an unfavourable turn of the battle. Transferring the corps artillery from one division to another during a battle is no simple matter, it is connected with many dangers. The baggage and ammunition trains would then have to be sent by different roads to different localities and they would probably not reach the corps artillery in time.

Under circumstances where nothing special is known about the enemy it has been proposed by several officers to distribute the corps artillery equally among the divisions. If this happens and especially for any length of time, much

inconvenience will be caused, in the command, issuing of orders, supply, etc.

After the abolition of the corps artillery, or rather its incorporation in the divisions, cases will no doubt occur when it will be expedient to detach a part of the artillery for some special purpose, but this is not a sufficient reason for keeping up a special corps artillery. The commanding general can just as well detach a portion of the artillery as he has been detaching portions of the infantry.

In face of these purely theoretical disadvantages, the corps artillery should not be allowed to exist. For marching and *rencontre* battles it is preferable to divide the corps artillery equally among the divisions. This formation would facilitate the issuing of orders, the troops concerned would receive better quarters and supplies and above all would permit of an early deployment of a large body of artillery, units would remain intact, and the supply of ammunition would be facilitated. The divisional commander with his strong body of artillery would be in a position to hold his ground even against a superior force, long enough for the other division to come to his support. If the situation of the battle in which his division is involved demands a reinforcement from the artillery of the other division, then the commanding general can always meet these demands, for the other arms shew that the temporary formation of a corps cavalry brigade or of an infantry reserve is by no means rare.

Finally during peace time the chief advantage lies in the closer connection of this arm with infantry, which has hitherto only been prevented by the retention of a corps artillery.

According to our present organisation the Divisional Commander is not placed in charge of his guns until orders for mobilisation issue. In peace time he has little to do with this arm. The instruction of the officers, the tactical training of so very important a branch is outside of the sphere of his influence. During the autumn manœuvres, for a short time only, artillery is placed under his orders, so that unless he himself has served with this arm, he is bound more or less to remain a stranger to it. This is an untenable state of affairs and a change in the composition of divisions to an organisation, which during peace time would be more in accord with requirements of active service, is as regards preparedness for war most desirable. The difficulties of mobilisation would moreover be considerably lessened, since in that case peace and war organi-

sation would correspond more than they do at present. Under existing circumstances the regiment of corps artillery has to be formed and lacks all those requirements which are necessary for a real regiment, especially as regards its establishment of officers. These circumstances have apparently been partly taken into consideration in the Russian *Ordre de Bataille*. At least Gudim Lewkovitch's book on Minor Tactics gives the following reasons for their organisation, which differs so entirely from that of other armies :—

" 1. Artillery is best placed under the orders of the commander of the unit to which it will be attached in war.

" 2. Both during the attack and defence it is advisable to use all the artillery available or at least such number of guns as will ensure success, and this is done most safely and quickly by an even distribution among divisions.

" 3. The General in Command can at any time, even when both divisions are engaged in battle, order the withdrawal of the required number of batteries should he deem it desirable to produce a special artillery effect on any particular point."

The Russians in fact consider a corps artillery organisation as inappropriate, as the arm may easily adopt the character of a reserve and being separated from other troops may frequently require special arrangements for its protection.

Which of the two organisations is preferable, supposing operations are properly conducted, only actual experience in war will show. But let us study the employment of artillery during the Franco-Prussian war: no doubt some lessons can be learnt which together with theoretical deductions will aid us in arriving at an opinion on the point at issue.

As the conduct of the war after the fall of the Empire shewed considerable deviations from the usual course of a campaign—that is to say, the occasional dissolution of corps, the scattering of brigades and divisions over a large space frequently necessitated the abandonment of the corps artillery organisation—our study is limited to the first period of the war up to the fall of Sedan.

The engagement at Weissenburg is characteristic as a *rencontre* which had been foreseen as a possible one on the German side. On this occasion the Generals Commanding the V and VI Army Corps attempted to get up to the front the corps artillery which was moving between the divisions. The General Commanding the II Bavarian Army Corps had to abandon the idea of a similar order, as his "Artillery reserve" followed in rear of his corps.

Three batteries of the V Army Corps drove up in comparatively good time alongside two batteries of the 9th division which were already engaged. The remaining three had to be kept in reserve, there being no room for them.

The sole reason however of the corps artillery arriving in time on this occasion is that its Commander, on hearing the sound of guns, of his own accord trotted on for $2\frac{1}{4}$ miles, and was already near the battlefield when the General sent directions to the portion of this arm at his special disposal to move up to the front. But for this independence of action the full development of artillery fire must have been considerably delayed.

Of the corps artillery of the XI Corps in spite of a trot of over $3\frac{1}{2}$ miles, only the 2 horse artillery batteries came into action against the retreating enemy. The field artillery batteries were unable to follow quickly enough on account of the heavy sandy road.

Thus in both Army Corps the corps artillery was used solely to reinforce that of the divisions. It had to be split up at the very commencement in order to enable it to be employed at all. An allotment to divisions would have enabled an earlier and more effective development of fire. This would have saved the infantry many a sacrifice. In spite of copses, vineyards and hop-gardens the increased divisional artillery would have found the necessary space, so that none of the batteries at disposal need have remained idle.

As regards the battle of Worth, the short distance of the field of battle from the bivouac furnished an exceptionally favourable condition for the V Army Corps. The artillery development therefore was quickly accomplished, and the corps artillery was employed exactly as is laid down in our present regulations.

The mixing up of units on arrival in position was due to mistakes on the part of the artillery. In any case, it is doubtful whether this defect would have occurred to a like extent, if the corps artillery had been distributed among the divisions. The artillery commander of the 10th division who rode on to reconnoitre the ground would most probably have seen to it that the batteries of the 9th division equal in strength to his own could have found room next to his. The high-road Dieffenbach-Worth was given as the line of demarcation at this point.

Hence there seems to be no advantage in the existence of a corps artillery as far as the opening of a battle is concerned even though it may arrive at a decisive point in time. Two divisional artillery units of the same total number of batteries would have produced the same result.

The course of the battle is most instructive. A difference in the tasks of these respective artilleries ought to have been apparent when the infantry advanced to the attack across the Sauer. The divisional artillery should have accompanied the attack, the corps artillery on the other hand should have taken up a position from which to prevent counter-attacks from the western bank of the Sauer. We find instead that the divisional artilleries could not make up their minds to separate from the corps artillery, and that the commanders did not issue the proper orders at the right moment. The batteries of the 10th division were ordered up only late in the day, half of the corps artillery joined them, the other half remaining with the batteries of the 9th division on the eastern bank of the Sauer.

As regards the XI Corps the counter-attack on the 21st division during the first advance would hardly have resulted in a helter-skelter retreat of the infantry to the eastern bank, had a powerful divisional artillery at Gunstett been able from the very commencement to check the pursuing opponent. These more numerous batteries would probably also have silenced the enemy's mitrailleuse battery which was drawn up on the western bank. Thus there would have been no necessity for the separation of the artillery of the 22nd division from its unit. At Gunstett there was a deficiency of artillery. This want was rectified by the arrival in position of the batteries of the 22nd division which happened to be near at hand ; but consequently the corps artillery which was ordered up to reinforce, and arrived rather late, could not find enough room for all its batteries to take part in the battle.

As with the V Corps, during the later stages, no difference in the employment of divisional and corps artillery is apparent. At the time of the struggle for Elsasshausen all cohesion among units was lost. Eventually several batteries of the V Corps were run up between those of the XI Corps.

The existence of a corps artillery on this occasion proved to be a disadvantage. At the commencement of the battle the artillery was too weak. This is the reason why the 22nd division had to accomplish its task without artillery, suffering heavily, whilst some of the corps artillery never came into action at all. Further, the limited space as well as the intermingling of units, rendered the fire control much more difficult.

At Spicheren an early development of heavy artillery fire was of particular importance both in order to cover the passage of the Saar and to fully unmask the enemy's position and strength. The 4 batteries of the 14th division were not sufficient for this purpose; the corps artillery unfortunately was with the 13th division about 8 miles off on the road Puttlingur-Wehrden and had no chance of arriving in time. Had it been split up, the 14th division which quite unexpectedly met a strong enemy would have been much more favourably placed; and the opening of heavier artillery fire on the Winter and Galgenberg would have in all probability cleared up the situation earlier in the day. After a much shorter artillery duel, the infantry attack could have been prepared and eventually supported. Its repulse on the Rotherberg would then scarcely have occurred, and the Prussian right wing would also have suffered much less from the French artillery posted east of the Stiring Wendel. The attack could not be continued until the arrival of batteries from other corps. Assistance however was brought by divisional artilleries only. The corps artillery of the VII, III and VIII Corps were far away from the battlefield and could only arrive too late. The horse artillery batteries of the VII and III Corps hurried on, but even they came too late to be of any material assistance.

A stronger divisional artillery therefore would certainly on this occasion have been preferable to corps artillery. Once the attack had been ordered, the immediate presence of more batteries would most decidedly have facilitated its delivery.

Just as at Spicheren, so at Colombey-Nouilly, the corps artillery was of no assistance to the VII Corps. Apart from their being located at an exceptional distance in rear and not available for early employment, the greater number of the batteries, when they did arrive eventually, were kept in reserve because the General Officer Commanding was rather opposed to the battle being delivered at all.

Hence the 13th division fought under great difficulties and its situation only improved with the arrival of the corps artillery of the I Corps. The latter arrived comparatively early on the spot where the 1st division was engaged and was able to materially support, from its position, the attack of the 13th division. Its employment was effective; the 1st division was able to continue the attack and the 13th to hold on. A general distribution of all available artillery would

have resulted in, at most, 7 batteries taking part in the attack of the 1st division at an equally early hour.

This case might apparently be cited in favour of the retention of corps artillery. But two points have to be taken into consideration. If the divisional artillery of both the 1st and 13th divisions had been increased, nearly the same number of batteries would have been available. The change of position of the corps artillery of the I Corps would probably have been unnecessary, when the enemy, after being reinforced on his left, apparently was preparing to turn our line on the right, rendering the reinforcement of the 2nd division with more guns desirable. Seven batteries could here easily have met this counter-attack, especially if the 13th division had commenced the engagement with more batteries.

Thus the apparent advantage of a corps artillery organisation disappears when compared with the better results to be anticipated from a complete distribution of the artillery among the divisions.

But the battle of Vionville further proves the disadvantage of such an organisation. The 5th and 6th divisions, the latter being followed by the corps artillery, ascended the plateau of Vionville on parallel roads, partly executing a flank march in front of the enemy. After the French camps had been alarmed by the Prussian cavalry the battle developed with extraordinary rapidity shortly after 9 A.M. The attack by the much superior opponent could at first only be met with 4 batteries of the 5th division in addition to those of the cavalry division. The number of guns available was inadequate, and it was only owing to a lucky stroke of fortune that several other batteries turned up soon (those of the detachments of von Lyncker and Lehmann). Owing to this circumstance, and aided by the batteries of the 6th division which had been hurried up our forces were with the greatest difficulty able to check the enemy's advance at about 10 A.M. near Vionville, Flavigny.

Had the batteries, not belonging to the 5th division, failed to take part in the combat the situation at the commencement of the battle would most decidedly have been much more unfavourable. We need hardly on this occasion discuss the conduct of the corps artillery; they were unable to relinquish their character of a reserve, and, excepting the horse artillery batteries which hastened on in advance, arrived after the taking of Vionville at about 11 $\frac{3}{4}$ A.M. But even if properly employed the batteries could not have arrived until some time

after those of the 6th division, and till then the 5th division had to rely on its own batteries only, *i.e.*, for a whole hour.

The difficulties as regards the deployment of the division were by no means diminished; a more favorable situation could have been brought about only by the distribution of the corps artillery. The larger number of batteries would not only have assisted the opening of the battle, but would also have insured the maintenance of the tactical units (the artillery towards noon was split up into 5 separate groups) and hence also better fire-control. Thus the existence of a corps artillery actually interfered with the early employment of massed guns. Its allotment to the 6th division was the consequence of a mistaken conclusion as to the whereabouts of the opponent. Such errors may always occur in future, and in such cases the corps artillery will always be too late.

The orders issued prior to the battle near Beaumont intended an early deployment of a strong artillery simultaneously with that of infantry north of the Bois du Pont Gerache. The execution of this scheme was impeded both by the forests that had to be traversed as well as by the retention of the corps artillery with the IV and XII Corps. Only a distribution among the divisions could have ensured each column being of equal strength and composition and their simultaneous deployment on debouching from the defiles.

In consequence of an order that the corps artillery should move on the outer wing of each corps, owing to the condition of the roads, the respective generals issued different marching orders to each of their corps.

The corps artillery of the IV Corps followed in rear of the 8th division, that of the XII Corps between the two brigades of the main body of the 23rd division. Thus as regards the IV Corps the batteries arrived with great difficulty only when the most important time for their action had passed and the victorious infantry was masking the fire of the guns to such an extent that only one battery was able to come into action for a very short time.

As regards the XII Corps the guns certainly got up in time. But by inserting the batteries between the brigades of the 23rd division the two infantry columns were much delayed, and the head of the 24th division debouched long before that of the 23rd.

Thus no advantages can be quoted on this occasion for the organisation in question, whilst on the other hand it must be regarded as the cause of the above-mentioned detrimental incidents.

As regards unpremeditated battles it would thus appear that a separate corps artillery is less advantageous than a proportionate increase of the batteries of the division. The same conclusion holds good in the case of the battle of Colombey-Nouilly.

As has already been explained, in a planned battle the disadvantages set forth can be avoided and hence such engagements are hardly suited for the consideration of the question at issue. Nevertheless some defects will be found in the employment of artillery at Gravelotte and Sedan, which were solely due to so inappropriate an organisation.

At Gravelotte the batteries of the 13th, 14th, and 15th divisions had been in action some considerable time before the corps artilleries (especially that of the VII Corps) turned up. The question of space had not been considered, hence the units had to be split up. The corps artillery batteries of the VIII Corps drew up on both flanks of those of the 15th division whilst those of the VII had to change position and could then only place three batteries in the firing line.

A stronger divisional artillery would certainly have accelerated the employment of artillery *en masse*. The splitting up of units would have been avoided, and better advantage would have been taken of the available space so as to enable all the batteries to come into action.

Moreover we can find nowhere that the two artilleries are differently employed, for it is the corps artillery batteries that try to move across the Mance in order to support the infantry attack. The divisional batteries are allotted by the General Commanding the VIII Corps to the reserve, and on the left with the XII, and Guard Corps each unit has to accomplish any task but the one it should carry out theoretically.

In the battle of Sedan the early arrival of the corps artillery of the Guards is rather conspicuous, the more so, when we remember that they were encamped well in rear of the 2nd division. On closer examination, we find that it was a case of exceptional and unusual luck which enabled them to be so soon on the spot, and that but for this the employment of a massed artillery could not have taken place until after considerable further delay. After a continuous trot from Carignan towards the battle-field ($9\frac{1}{2}$ miles) the field artillery succeeded in slipping in, near Pouru St. Remy, between the two detachments of the rather peculiarly formed advanced guard of 2nd Guard's division without causing any delay. (The horse artillery batteries had previously been attached to the

division of the Cavalry of the Guards). These batteries continuing to trot were thus able to reach the western outlet of Villers-Cernay even before the arrival of the main body of the 1st Guards' division, which was marching on the right. They in fact drew up in position along the northern edge of the copse of Villers-Cernay $\frac{1}{4}$ hour later than the batteries of the 1st and $\frac{1}{8}$ hour earlier than those of the 2nd Guards' divisions.

There could in fact have been no real certainty as to their early arrival. Had other troops been met or crossed, delay would have been unavoidable. Only a distribution of the batteries to divisions could on this occasion have insured the early development of the artillery combat. Anyhow the fact that already at 9-30 A.M. eleven batteries were engaged in breaking the enemy's resistance in the Bois de la Garenne cannot be attributed to a corps artillery organisation.

As regards the batteries of other corps it may be observed that the corps artillery of the XII did not arrive together, but piecemeal and rather late. Thus the four batteries of the 24th division at La Moncelle passed an anxious time between 7 and 8 A.M. until the arrival of the supporting batteries, especially as during the course of the combat they had to change their position.

A distribution of batteries would have been more favourable to the conduct of the battle, and the advanced guard of the 24th division could have been supplied with a much stronger force of this arm. Such a measure would have been all the more appropriate, as it was their particular task to hold the enemy. At the same time tactical units would have remained less split up. Three batteries of the 4th Field Artillery division drew up in three different places, whilst the fourth was kept in reserve.

From the above instances we may conclude that a delay in the deployment of massed artillery, repeatedly made itself felt, even during the 1870-71 campaign, on the German side in spite of the distinct superiority of their arm over that of the French. It may be admitted that artillery leaders will have learnt a lesson from the mistakes that have been made and that on a future occasion many of them will be avoided. The possibility of a repetition of such mistakes, as arise from organisation, must continue until a change in organisation obviates them itself. An omission to make such a change may result in disaster where armament, training and military education of opposing armies are equal. The importance of an early employment of massed artillery has

been universally acknowledged, and in all situations it is easiest attained by a strong divisional artillery, *i.e.*, by a distribution of the batteries of the corps artillery.

Finally a few of the changes may be alluded to which would result from such a distribution of corps artillery batteries to divisions.

As already explained, this arm might in peace time be advantageously allotted to divisions. Further, there would be no object in maintaining the present artillery regiments which for training purposes have proved too strong. Besides the increased number of batteries with the division would not be able to act as one regiment only.

Both for purposes of peace and war it would be more appropriate to have two such regiments per division, one for each brigade as with the cavalry.

There are at present an average of 24 batteries in every corps, so that the 4 regiments of artillery might be evenly sub-divided into 2 divisions of 3 batteries each. The latter has been found in practice the most suitable number for training purposes as well as for employment.

I have included in this number of batteries the horse artillery of the cavalry divisions as well as those which furnish the nucleus of a reserve of either horse or field artillery. The latter (assuming there are 4 to each corps) must on mobilization be eliminated, so that the divisions of each regiment would be able to start with only 2 batteries. Taking into consideration that the mobilized divisions should have the same strength as in peace time, it will be necessary to endeavour to complete them accordingly.

These proposals therefore require an increase of this arm in peace time. The latter would be facilitated, inasmuch as a number of horse artillery batteries, which on principle are being kept up in several corps, might be done away with, and their horses be used to increase the number of field artillery batteries.

Whatever horse artillery divisions have to be maintained for the cavalry division might be attached to regiments as a third sub-division. Their surrender on mobilization would not then result in disorganisation of units.

To place the batteries in peace time under the divisional commander would also do away with a special commandant of artillery on the staff. Replacement of ammunition on a large scale is not practised. The employment of massed artillery of more than 12 batteries when acting in concert with other

arms occurs at most only once a year (corps manœuvres against a masked enemy) apart from the Emperor's manœuvres.

The Commandant of Artillery in the corps would in peace time have nothing to do. In war it is different. The regularizing of ammunition-supply here plays a prominent rôle; further the united control of the entire artillery of the corps (in premeditated battles) as well as the occasional splitting up of artillery for definite purposes require a special Chief on the General Staff, who would have to be appointed even under the proposed scheme of mobilization.

There is something rather tempting in carrying this idea of decentralisation even still further and to turn the divisional artillery by an allotment of its ammunition columns into a compact self-contained unit. The enormous train which follows the corps would then have to be controlled from three different quarters, which is not desirable. Friction would be unavoidable and require constant interference on part of the General Officer Commanding. Moreover the latter, by having the ammunition columns under his own charge, exercises a certain amount of restraint on the desire of independent action so frequently evinced by divisional commanders, and further is able to count with certainty on at least the proper supply of ammunition being available at the point which he considers to be the decisive one.

RESULTS OF TRIALS AGAINST NICKEL-STEEL ARMOUR-PLATES, HARVEY'S SYSTEM, IN AMERICA, ENGLAND, AND RUSSIA, UP TO AUGUST 1897.

(Contributed by the Intelligence Branch).

It appears that Russia was the first to carry out trials on the practice ground at Okhta with the projectile constructed by Holtzer. The construction of this projectile is kept secret, but one knows that it is made of steel, with a projecting point, made of hardened steel, which is held in position in some magnetic way. This projectile for the 6" (15 cm.) gun weighs 90·9 lbs. (41·2 kg.). It was tried against the 6" (15·24 cm.) nickel-steel armour-plate, hardened on its outer surface according to Harvey's system. The velocity was 560 m. The angle of impact was tried up to 25°, and in all cases the projectiles passed through and remained intact, but beyond 25° of the angle of impact it broke up. The same projectile was tried at a velocity of 728 m. at an angle of impact of 8° against a 10" (25·4 cm.) nickel-steel plate, hardened according to Harvey's system. It completely passed through without breaking up.

According to Tresidder's formula, the penetration in these trials would be equivalent to the penetration of a wrought iron plate of 26·67 to 30 cm. thickness.

On the same practice ground, the 8" (20·32 cm.) Krupp gun, with a shell of 193·3 lbs. (87·25 kg.), and with a velocity of 2,850' (868·68 m.), was tried against a 10" (25·4 cm.) nickel-steel plate, Harvey's system; the shot passed through and gave a surplus of energy of 700' (213·36 m.) which, according to Tresidder, is equivalent to the penetration of a wrought iron plate of 71·88 cm.

In America the trials were carried out with the Wheeler-Sterling steel shell. The 12" (30·48 cm.) shell weighs 850 lbs. (385·5 kg.), and with three shots had an average velocity of 566 m., and with which it completely passed the through 17" (43·18 cm.) nickel-steel plate, Harvey's system. One projectile after penetration showed some slight damage at the bottom; the second had the point broken off (fired without cap; the third was broken right across. The penetration, according to Tresidder, would be equivalent to 64·77 cm. of wrought iron.

A 4" (10.16 cm.) projectile, weighing 33 lbs. (15 kg.), with a velocity of 2,000' (609.6 m.), passed through a 5½" (13.97 cm.) nickel-steel plate, Harvey's system. The equivalent, according to Tresidder, would be a wrought iron plate, 24.64 cm. Later, projectiles, made completely of steel, by Johnson, with soft steel caps, were tried. The 6" (15.24 cm.) projectile, weighing 100 lbs. (45.4 kg.), passed through the 7" (17.78 cm.) nickel-steel plate Harvey's system, but easily lost its shape. The same projectile, weighing 105½ lbs. (47.75 kg.), passed through a 10" (25.4 cm.) nickel-steel plate, Harvey's system, with a velocity of 2,505' (763.52 m.). The bottom was found broken at one side.

In England the 6" (15.24 cm.) Hadfield steel projectile, weighing 100 lbs. (45.4 kg.), with a velocity below 1,900' (578.12 m.), and with a blunted point, passed through a 6" (15.24 cm.) nickel-steel plate, Harvey's system, but broke up (Trials at Portsmouth).

At Shoeburyness a 6" (15.24 cm.) steel projectile from the Royal Laboratory, weighing 100 lbs. (45.4 kg.), was tried against a 6" (15.24 cm.) nickel-steel plate, Harvey's system with a velocity under 1,900' (578.12 m.). The point, 3.4" (8.63 cm.) long, penetrated, but the body of the projectile broke up.

Two similar projectiles from the same laboratory, but with affixed steel caps, passed through the same plate, with a velocity of 1,858' (566.22 m.), but broke up. The equivalent of wrought iron, according to Tresidder, would be 31.24 cm. Two Hadfield projectiles, with affixed steel caps, weighing 100 lbs. (45.4 kg.), and with velocities of 1,940' and 1,960', were tried against the same plate. The projectiles passed through, but broke up into pieces.

from the "Deutsche Heeres-Zeitung."

NOW READY.

HANDBOOK FOR INDIAN CAVALRY.

BY

MAJOR F. W. P. ANGELO, 9TH BENGAL LANCERS.

A COMPLETE Manual of useful hints and information regarding all branches of Cavalry duty. Published with the approval of Major-General Locke-Elliot, C.B., D.S.O., Inspector-General of Cavalry.

Useful to all Officers of the mounted branches in India, to Staff Officers and to Officers studying for Examinations etc.

Invaluable to Officers attending Cavalry Manœuvres.

Price, Rs. 10.

Publishers : Pioneer Press, Allahabad.

NOTICE.

The sum of Rs. 500, allotted by the Council of the United Service Institution of India, as premia for articles contributed to the Journal during 1898, was distributed between the undermentioned Officers :—

Colonel H. D. Hutchinson, Director of Military Education in India.

Lieutenant-Colonel F. M. Rundall, D.S.O., 1-4th Gurkha Rifles.

Lieutenant-Colonel J. A. H. Pollock, 1st Sikh Infantry.

Major A. Keene, D.S.O., Royal Artillery

Major C. H. Melville, M.B., Royal Army Medical Corps.

Captain H. A. Iggulden, Derbyshire Regiment.

Captain M. E. Carthew-Yorston, 4th Bombay Cavalry.

Captain H. T. Kenny, 2nd Bombay Lancers.

Prize Essay Gold Medallists.

- 1872.....ROBERTS, Lieut.-Col. F. S., V.C., R.A.
 1873.....COLQUHOUN, Capt. J. A. S., R.A.
 1874.....COLQUHOUN, Capt. J. A. S., R.A.
 1879ST. JOHN, Maj. O. B. C., R.E.
 1880.....BARROW, Lieut. E. G., S.C.
 1882.....MASON, Lieut. A. H., R.E.
 1883.....COLLEN, Maj. E. H. H., S.C.
 1884.....BARROW, Capt. E. G., S.C.
 1887.....YATE, Lieut. A. C., S.C.
 1888.....MAUDE, Capt. F. N., R.E.
 YOUNG, Maj. G. F., S.C. (specially awarded a silver medal).
 1889.....DUFF, Capt. B., S.C.
 1890.....MAGUIRE, Capt. C. M., S.C.
 1891.....CARDEW, Lieut. F. G., S.C.
 1893.....BULLOCK, Maj. G. M., Devon. Regt.
 1894.....CARTER, Capt. F. C., Northumberland Fusiliers.
 1895.....NEVILLE, Lieut.-Col. J. P. C., S.C.
 1896.....BINGLEY, Capt. A. H., S.C.
 1897.....NAPIER, Capt. G. S. F., 2nd Bn. Oxfordshire Light Infantry.
 1898.....MULLALY, Major H., R.E.
 CLAY, Capt. C. H., S.C. (specially awarded a silver medal).

MacGregor Memorial Silver Medallists.

- 1889.....BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).
 1890.....YOUNGHUSBAND, Capt. F. E., K. Dn. Gds.
 1891.....SAWYER, Maj. H. A., S.C.
 1891.....RAMZAN KHAN, Havildar, 3rd Sikhs.
 1892.....VAUGHAN, Capt. H. B., S.C.
 1892.....JAGGAT SINGH, Havildar, 19th P. I.
 1893.....BOWER, Capt. H., S.C. (specially awarded a gold medal).
 1893.....FAZALDAD KHAN, Dafadar, 17th B. C.
 1894.....O'SULLIVAN, Maj. G. H. W., R.E.
 1894.....MULL SINGH, Sowar, 6th B. C.
 1895.....DAVIES, Capt., Oxfordshire Light Infy.
 1895.....GUNGA DYAL SINGH, Havildar, 2nd B. I.
 1896.....COCKERILL, Lieut. G. K., 28th P. I.
 1896.....GHULAM NABI, Private, Q. O. Corps of Guides.
 1897.....SWAYNE, Capt. E. J. E., 16th B. I.
 1897.....SHAHZAD MIR, Dafadar, 11th B. L.
 1898.....WALKER, Capt. H. B., Duke of Cornwall's Light Infantry
 1898.....ADAM KHAM, Havildar. Guides Infantry.

The Journal

OF THE

United Service Institution in India.

VOL. XXVIII.

APRIL 1899.

No. 135.

A FEW SHORT NOTES ON THE ADMINISTRATION OF THE UNITED STATES ARMY IN THE PHILIPPINES.

BY CAPTAIN S. S. LONG, DEPUTY ASSISTANT ADJUTANT-GENERAL,
HONGKONG.

The Hispano-American War has brought forward a hitherto neglected factor, which is bound to have a considerable influence on international questions: the vast citizen army which it is possible for the United States to get together.

A study of the American Forces operating in the Philippines well illustrates this question and is worthy of attention.

The American Army before Manila was, with the exception of a small portion, entirely composed of volunteers; and in spite of defective administrative staff and departments, insufficient equipment, and officers who possessed little, if any, more military training than the privates, these troops displayed a spirit of intelligence and obedience, combined with an individual willingness to perform their duty that might be rivalled, but could not be surpassed by the finest disciplined troops.

They might be aptly described a great Military Paradox. A body of men of magnificent physique possessing perfect discipline, and yet without any discipline at all.

These troops, without previous similar experience, after a journey of 8,000 miles, had, practically without naval assistance, to land themselves upon an inhospitable, hostile shore, carry their stores, etc., through—on most days—a heavy rolling surf, and transport them themselves for two miles through deep mud under tropical rains to their camp, which consisted of shelter tents only. Every third day each unit spent twenty-four hours in the trenches facing the Spanish lines,—trenches which were little better than dykes, half full of water and mud, absolutely devoid of shelter from the rain, and where, if a man was tired of standing, he had to sit in the slush.

C

Frequently at night, exposed to a galling and irritating fire from the Spaniards, they obediently complied with orders and patiently bore the enemy's fire without attempting to return it, even when occasionally their comrades were struck beside them. This restraint on the expenditure of ammunition was thought necessary by the American authorities, who feared running short of the supply.

In the advance on Manila on August 13th, although it may be said they were unopposed, still, as far as the junior officers, non-commissioned officers, and men were concerned, they were ignorant that this would be so, and their behaviour left nothing to be desired. The advance took place between 11 and 12 midday, and by 5 P.M. every road, bridge, and gateway of the town was carefully picketed and held by American troops, who, the whole of that night, Sunday, and Sunday night, uncomplainingly remained in the streets under heavy tropical rains, good-temperedly carrying out the difficult and troublesome duty of preventing armed insurgents from entering the town, and carefully abstaining from coming into unnecessary conflict with the large mass of Spanish officers and soldiery, who were rather aggressively parading the streets. The most careful enquiries failed to elicit any report of a complaint being made of any act of pillage or assault committed by an American soldier.

If conduct such as this is obtainable from raw volunteers of no experience, and under such unfavourable circumstances, then it should be borne in mind that troops of this sort are a factor to be seriously considered, particularly after they have had a few months' training.

As it may be of some interest to more deeply study the question of the organization of this expedition, it is proposed to slightly touch on the American Army Organization, showing where on the present occasion this organization may be worthy of imitation or, as is too often the case, fatal to the interests of an army in the field.

The American Regular Army, which consists of 25,000 men only, is commanded by a major-general, the highest rank in the United States Army, any higher being conferred only by a special Act of Congress. The army is administered by nine departments, each presided over by a brigadier-general; and as all, to a very large extent, work independently of each other, the result is frequently prejudicial to the interests of the service.

They are—

- I. The Adjutant-General's.
- II. The Inspector General's.
- III. The Judge Advocate General's.
- IV. The Quarter Master General's.
- V. The Engineer Department.
- VI. The Subsistence „
- VII. The Ordnance „
- VIII. The Medical „
- IX. The Pay „

These branches are purely departmental, and, as a general rule, an officer selected for employment in one or other serves the rest of his time therein, with the natural result that the staff and departments are largely out of touch with the army. Appointments to the staff are made from the army generally, usually through political influence, and in some instances even civilians, through similar influences, are appointed to the Pay Department.

I. The Adjutant-General's Department deals with all questions of drill, training, and instruction of troops, but not discipline, which is dealt with by the Judge Advocate General's Department, with the result that the senior branch of the staff and in fact all branches, and the army generally, are deficient in a knowledge of legal procedure.

II. The Inspector General's is a special department whose duties are to carry out those usually performed by a General Officer Commanding in the British service. This department sends its officers to inspect all districts and posts and every branch therein, and reports direct to the Secretary for War.

III. The Judge Advocate General's Department deals with all questions of law affecting the army, and is the direct adviser on these matters. Applications for trial by a military court are, in the first instance, submitted to the Judge Advocate of the Post, District, or Force, and the proceedings before confirmation again pass through his hands. The power of the Judge Advocate, as an expert, was particularly noticeable at Manila, as every proclamation by the General Commanding appeared to require his jealous scrutiny to see that it did not infringe the law of the land or the constitution of the United States.

IV. The Quarter Master General's Department deals with clothing, camping, fuel, light, forage, and all transport, both land and water.

In the district, or in the field, the departmental head is known as the Chief Quartermaster. Each division, brigade, and regiment has its Quartermaster attached to it, known respectively by the official title of Divisional, Brigade, or Regimental Quartermaster.

This department, which may have understood its onerous duties in times of peace, and when working in its own country, was apparently without organization or initiative at Manila.

The Regimental Quartermasters were generally regimental officers without previous experience; and although all certainly worked with the utmost energy, they failed, not from want of ability, but of knowledge.

The clothing of the troops left much to be desired. It is true that the expedition was hurriedly equipped and despatched, but even so it ought to have been possible to send troops into the field with some thin clothing in addition to the heavy clothing of their own country, and certainly some effort ought to have been made to provide a better head covering than the ordinary soft felt hat, which afforded little, if any, protection from the sun. As regards this latter point,

owing particularly to its being the rainy season there were no cases of sunstroke reported.

The men generally worked and paraded in their thick blue flannel shirts with turned down collar, a pair of thick canvas or moleskin trousers, and usually wore no braces, the trousers being kept up by the cartridge waist belt which held 200 rounds of ammunition in a double row.

A pair of very good canvas gaiters reaching to within a few inches below the knee and a pair of heavy boots completed this working dress.

The troops had no great-coats on shore with them, but every man had his *Poncho*, i.e., a square of Mackintosh, 6 feet by 4 feet, with a slit in the middle, which could, if necessary, be fastened with a button, and the Poncho used as a waterproof sheet. It also had some eyelet holes along the edges, so that, if necessary, two would make a fairly serviceable shelter tent.

The appearance of men walking about, or on parade, with their heads through these pieces of Mackintosh, may not be smart looking, but their utility for a variety of purposes, and the excellent shelter they gave to the man, while leaving his hands free, mark them as an article well worthy of adoption.

Every man was provided with a pair of low canvas shoes, which must have considerably added to his comfort in camp.

The requirements of an expedition at a distance do not appear to have been well studied; and many men were deficient of necessary articles, and even after the fall of Manila some were deficient of boots.

Sea Transport.

A noticeable feature of this expedition was the apparently absolute ignorance of the Admiralty and Navy as regards their duties towards the Army.

The army chartered, superintended the fitting, equipping and coaling of all transports, with the result that, when they proceeded to sea, they discovered that in some instances they were badly or deficiently found; and, after arrival at Manila, it was noticed that the Chief Quartermaster was occupied with questions regarding the coaling and detention, etc., etc., of transports more than with the necessities and requirements of the army.

The landing of the troops and stores cannot be too adversely criticised.

After the destruction of the Spanish Fleet and the capture of Cavite on the 1st of May, all steam vessels, launches, boats, and lighters that remained afloat fell into the hands of the American Navy; and as they were blockading an enemy's port, the captured launches were extremely useful for patrolling purposes, etc.

No steps appear to have been taken by the navy to sound and buoy the best landing places for troops. On their arrival,

for two days some assistance was rendered to land a portion of them, but after that they were left to their own devices to do the best they could, having as a means of transport an old paddle-wheel river steamer and two or three very worn out cranky launches, with a few crazy boats and lighters.

No naval transport officer was appointed, and, as a result of this lack of professional assistance, the troops suffered greatly in landing, and a quantity of valuable stores were lost in being brought ashore through the heavy surf.

In this way the whole of the ammunition for the Astor Battery was lost, and although a portion was afterwards recovered, this battery was rendered practically useless till the day before the fall of Manila. The work thus thrown on the army would, had they had an enterprising enemy, have certainly led to disaster.

Land Transport may be said to have been conspicuous by its absence. A small number of *caramatas* (a small two-wheeled gig drawn by a pony) and a few water buffalo carts had been got together, but were utterly insufficient for the requirements, and what transport existed was entirely deficient of any good organization.

The stores were landed at Paranaque, about 2 miles from Camp Dewy, and a large bulk of them were carried to camp through the heavy mud by the men themselves. Had it not been for the splendid energy of the troops, inspired by the magnificent spirit that permeated the whole force, the army would have been little better than an inert, immovable mass. No portion of the whole operations deserves more praise than the sight of soldiers labouring under heavy loads, in a tropical climate, carrying their camp *impedimenta* and stores the 6, 7 and 8 miles from Camp Dewy to the city of Manila on the day following its fall.

The whole working of this department was an excellent example of the need for specially highly trained officers to administer and carry out these important duties.

A point which is more fully dwelt on in the notes on the Commissariat, or Subsistence Department, is the separation of Commissariat from Transport as carried out in the United States Army: a separation which is fatal to the interests of the army, and from which no good results can possibly be obtained.

V. The Engineer Department.—The work of this department was hardly anywhere observable. It appeared that many of its trained officers were removed from their corps for other general and staff purposes, and their places taken by both untrained and unqualified officers, with a consequent loss of efficiency.

No steps were taken to run out piers and landing stages, although such could have been easily done, the country in the immediate vicinity being well timbered, and any quantity of bamboo obtainable; skilled labour was at hand, which, under good guidance, could have rapidly built out a serviceable pier and landing stage.

Little, if any, effort appeared to have been made to improve the roads, which, although exceedingly bad, might have been rendered

somewhat less so by clearing the ditches on each side so as to draw off the water, which in many places lay several inches deep and caused veritable quagmires.

No special arrangements were made for crossing the river between the Spanish and American trenches, fordable only at its mouth, until the day before the fall of the city, and then some rough bamboo trestles, etc., were hurriedly got together.

As far as could be observed, had it been necessary to storm the city, the loss of life would, owing to the inefficiency of this branch, have been enormous and success very doubtful.

The field telegraph appeared to be efficient and to work well, but was very slow in opening communication.

In connection with this subject the signallers were well trained and appeared to be most efficient, particularly during the advance on the city.

VI. *The Subsistence Department.*—The Subsistence Department is administered by the Commissary-General, whose chief representative in the district is known as the Chief Commissary. The organization of the department is on similar lines to the Quartermaster's.

As its name implies, it looks after all food stuffs required for rationing the troops; but as will be presently shown, it takes on its shoulders not only these requirements, but also practically constitutes itself the sutlers of the army.

As far as the troops are concerned, there is only one scale of rations, no matter where they may be quartered. But this scale admits of infinite variation of diet; and as the allowance is very liberal, the result is that American soldiers are the best fed troops in the world.

The ordinary daily ration consists of—

1½ lbs. fresh beef.
1 lb. 2 oz. flour.
½ oz. baking powder.
2½ oz. beans.
1 lb. potatoes.
1½ oz. coffee, green.
2½ oz. sugar.
½ gill vinegar.
½ oz. salt.
½ oz. pepper.
½ oz. soap.

The above may be varied as follows:—

In lieu of fresh beef any of the following:

Fresh mutton, 1 lb. 4 oz. when the price does not exceed that of beef.
Pork, 12 oz.
Bacon, 12 „
Salt beef, 1 lb. 6 oz.
Dried fish, 14 oz. when meat cannot be furnished.
Pickled fish, 1 lb. 2 oz. ditto.
Fresh fish, 1 lb. 2 oz. ditto.

In lieu of flour and baking powder any of the following:

Soft bread, 1 lb. 2 oz.
Hard bread (biscuit), 1 lb.
Corn meal, 1 lb. 4 oz.

In lieu of beans any of the following :

Peas, $2\frac{1}{2}$ oz.
Rice, $1\frac{1}{2}$ oz.
Hominy, $1\frac{1}{2}$ oz.

In lieu of potatoes any of the following :

Potatoes, $12\frac{1}{2}$ oz. and $3\frac{1}{2}$ oz. onions.
" $11\frac{1}{2}$ oz. and $4\frac{1}{2}$ oz. canned tomatoes, cabbage, beets, turnips,
carrots, or squash.

In lieu of green coffee :

Roasted coffee, $1\frac{1}{2}$ oz., or
Tea, green or black, $\frac{1}{4}$ oz.

In lieu of sugar :

Molasses $\frac{1}{2}$ gill, or
Syrup, $\frac{1}{2}$ gill.

On this particular expedition the troops drew their meat ration as follows :—

6 days' fresh meat.
3 days' bacon and preserved meat.
1 day's canned salmon (1 lb.).

But so long as they drew in the above proportions, they were allowed to draw a proportionate quantity of fresh and preserved meat and canned salmon each day, so that they had bacon for breakfast, fresh meat for dinner, and preserved meat or fish for supper.

From the above it will be seen that the troops are provided with a very good ration, amply sufficient for their needs.

The rations which were provided were of excellent quality and appeared to give universal satisfaction.

An entirely new departure, one of unqualified success, was the provision of a refrigerating steamship, loaded with frozen beef and mutton.

This vessel, which contained some thousands of quarters of the above, rendered the question of the meat supply one of the utmost simplicity; and, as far as could be ascertained, the cost of provision was most economical.

The price of the meat was only 5 cents per pound, and, adding on the charge for demurrage, some thirty pounds sterling per diem, a two months' supply for both naval and land forces, only cost about 5 pence per pound.

This experiment is well worthy of note, as, although in the case in point the troops were close to their supply, it should be borne in mind that, as it takes some twenty-four hours to thaw out frozen meat when in bulk, troops could be supplied, with meat of this description, as long as they were not more than twenty-four hours removed as to transport from the sea, which in the case of railways would mean a considerable distance.

During peace time troops are allowed to accumulate their rations, except meat and fresh vegetables, and at the end of the month, if not drawn, the Government either credits the company with the value

thereof, or the accumulations may be sold under company arrangements and the proceeds credited to a fund for the general benefit, which is expended for the purchase of luxuries such as butter, jams, etc., etc.

Advantage is very largely taken of this permission, and it frequently happens that the unit, even after the provision of all requirements, accumulates large funds, which they devote to extra comforts when travelling, etc., etc.

The department also, to a large extent, supervises the cooking, and the small "Manual for Army Cooks" issued under the orders of the Commissary-General is wonderfully complete and useful.

The contents comprise methods of cooking, cleaning utensils, choice and description of meats, how to save dripping, description of army ranges, bills of fare, savings, company funds, recipes extending to several hundreds, camp cookery, disposal of refuse, extemporised stoves or cooking places, description of field ovens, bakehouses, etc. Hints regarding water and wood, filters, and much other useful information. A point which was particularly noticeable was that there was no provision made for the issue of either a rum or porter ration; and as regards the former, the sale of spirits in any shape or form is absolutely forbidden by Army Regulations.

It was stated that it had been found that troops were more effective and kept their health better when deprived of all alcohol, but well fed. At all meals the soldier had abundance of excellent coffee, and with the same beverage he invariably filled his water-bottle. The American soldier is an adept at making coffee, and a drink from his bottle is always refreshing and palatable. Frequent drinking of liquid, even water, is strongly discouraged, it being held that once a man gives way to his thirst, he is useless for any further arduous labours that day.

The instructions as regards the preparation of meals on arrival in camp differ somewhat from that usually followed in the British service, it being laid down that only a light meal of a little fried bacon or some other easily provided article is to be served at first, and should be ready within half an hour after the cooks reach camp. The heavy meal is served at a later hour.

The point before mentioned, that the department constitutes itself the sutlers for the troops, appears to be an entirely new departure from the custom of other countries.

Practically the Subsistence Department provides at every post, in charge of the Commissary or of a Commissariat representative, a large store of articles which can only be accurately described as a well stocked provision shop, and of considerably more variety and better quality than the average Regimental Institute in the British service.

Many descriptions of tobacco, cigars, soaps, stationery, etc., are kept in addition. All or any of these articles are sold to the troops at the actual cost to Government at wholesale prices at the place of production, the cost of carriage and transport being borne by the State. Officers are also at liberty to purchase at these stores anything they may require for their own or family needs.

As soon as Manila fell, stores of this description were at once opened and a number of Jewish and other camp followers, who had come there naturally expecting to reap a rich harvest, found themselves over 100 per cent. undersold by the Government.

It was stated that until the introduction of this system endless trouble resulted from complaints by posts and detachments in out-of-the-way places that they were unable to obtain goods, or requests for extra allowances to meet the enhanced cost of living at such stations.

This system appears good and undoubtedly gives great satisfaction and contentment to the troops, and it is stated that in the long run the Government is the gainer by having little difficulty in recruiting, no demands or agitations for extra allowances, and a general contentment with their lot on the part of the officers and men serving.

The provision and maintenance of supplies is provided for by appointing a number of purchasing Commissaries, to whom the Commissaries of Districts or Posts send their requisitions each month, except when, owing to climatic reasons, there is a difficulty in keeping up a continuous supply, in which case supplies are forwarded at the most convenient season of the year.

Contracts are only made for short periods, usually one month, and the general custom is to call for tenders by advertising in the newspapers. The system of accounts appears simple, and the work of the department is, as far as possible, run on general business principles.

The great defect in the department, which it is considered would be disastrous in any extended operations, requiring rapid or continuous movement of troops, is the separation of the transport from the control of the Commissariat Officer.

If it be accepted as an axiom that to be a good Commissariat Officer, a man must have an intimate knowledge of transport, and *vice versâ*, then the United States' system must result in failure.

That transport should always be subversive to Commissariat, being simply a means to an end, was noticeable at Manila. The subsistence had everything that the troops could possibly want, but no means of taking it to them, and had they not helped themselves by carrying their own supplies, they would have had to go without.

VII. The Ordnance Department.—This department did not appear to be much *en evidence* during the operations, and no opportunity occurred for observing its work.

A point which is fatal to the interests of the country is that there is no such organization as an ordnance committee to decide on the armaments, rifles, and weapons to be used by both naval and land forces.

The navy and army have committees of their own, who work quite independently of each other, and, as a consequence, there is no interchangeability of weapons between the services.

Both the navy and army have lately introduced magazine rifles, but of different calibre, that of the navy being the smallest of any modern weapon in use.

The regular troops were armed with a new magazine rifle, the Krag-Jorgensen, and short sword bayonet very similar to the Lee-Metford. The volunteers were armed with the obsolete Springfield and long bayonet.

VIII. *The Medical Department.*—Considering the hurried way the expedition was despatched, this department appeared well equipped, and though at no time were they put to any great strain, still the work they had to do was well and excellently performed.

The sick were accommodated in light marquees, six men to a tent, bedded on a folding camp bed with wire wove mattress, 2' 6" width, a blanket, pillow, also a bedside table and chair, the space between the beds about 2', any extra bedding or blankets being brought from his unit by the patient. The system adopted at Manila was that surgeons of the regular forces were employed with the brigade and base hospitals, and volunteer medical officers did duty with each regiment or unit.

No man was taken into hospital unless his state was such that, in the opinion of the medical officer, he required special treatment or diet, otherwise he was treated in his own regimental camp and performed such duty as the medical officer considered him fit for.

The hospital appeared to be very well found in the way of medicine, drugs, instruments, and appliances. The medicines and drugs were made up in the most portable form, such as compressed tabloids, etc., and the dressings, etc., were in the handiest shape, and in packets ready for immediate use.

It speaks well for the skill of the department that they were completely successful in a large number of cases of abdominal wounds.

The health of the troops was extraordinary, and was a subject of constant remark. Out of 8,000 men who were in camp before Manila, only 124 were left behind sick when they advanced on the town on the 13th August, and of these more than one-half were wounded. The following day—Sunday—the sick were moved into the town and the greater proportion walked, as there was only transport enough to carry the bad cases. If the spirit of the troops was excellent, it was even surpassed by that of the medical branch, who, in spite of a defective transport and many other difficulties, always had their hospitals as complete and efficient as it was possible for human ingenuity to make them.

IX. *The Pay Department.*—This department performs similar functions to that in the British service, except that they deal with and decide all questions affecting the pay, etc., of the army, and are quite independent of the Quarter Master General's Department.

It committed a great error in bringing to Manila over a million and a half of dollars in gold for the payment of the troops. The consequences were that the men found great difficulty in getting change and lost considerably by the natives refusing to see any difference between an American gold dollar and a Mexican or Manila silver dollar, although the former was in actual fact worth slightly more than double the latter.

A PLEA AND A SUGGESTION FOR A RECRUITING DEPARTMENT FOR INDIA.

BY CAPTAIN R. W. FALCON, DISTRICT RECRUITING OFFICER, PATHAN DISTRICT.

The importance of the question of recruiting the Indian Armies and the proof, if any is required, that the present system of recruiting as a whole is by no means satisfactory is clearly shown by the adoption of the subject for the prize essay of 1897 by the Council of the United Service Institution of India of 'the best method of recruiting the Indian Armies from sources not hitherto tapped, on the assumption that enlistment among the recognised martial races of the Indian Empire and its frontiers has been pushed very nearly to its utmost limits.' But I am very far from agreeing with the author of the prize essay that the best solution of the difficulty would be to preserve the present recruiting grounds for the use of the Indian Armies only; I believe that the only sound solution of this question does not lie in that direction at all, but in the formation of a proper Recruiting Department, whose duty it would be to find out exactly what material India possesses and how, with due regard to political considerations, it can best be utilized in providing the armies required for the Empire's various needs.

I base my contention of the necessity for a Recruiting Department in India upon the following three assumptions:—

- (i) that, for practical and political purposes, sources for enlistment lying within the Indian Empire must always be infinitely more valuable and less expensive than sources which are without the Empire; as the first furnish men who, in time of war, will be influenced by a certain amount of patriotism, will be fighting for the peace and quiet of their homes, in the service of a Government whose rule they are acquainted with and are willing to endure, and whom it is easier to discipline through the hold that Government has on their families and possessions; whilst the second can only furnish mercenaries, influenced by the hopes of good pay, plunder, and general personal advantages, whose presence must always be an insult and source of soreness to, certainly, the martial races, if not to all the other races of India;
- (ii) that we have no right to assume that sources of enlistment within the Indian Empire are being at present utilized to their utmost until we have thoroughly assured ourselves on this point; and
- (iii) that the only way to do this is to systematically map out the whole of the Indian Empire into recruiting districts,

each under a recruiting officer, and in this way to thoroughly satisfy ourselves as to the real state of affairs.

Surely, an immense Empire like this, complicated by the extraordinary diversity of its races, is entitled to and demands some thorough system of recruiting from it; not one which leaves it in any way to the chance of individual experience and advice, which even in the case of the best of us must be but limited, in order to definitely settle what material it is able and willing to supply, fitted to be used in its defence.

The necessity for some sort of a system of recruiting has been already acknowledged by the appointment of a certain number of recruiting officers for the more martial races of the Punjab and Bengal, since extended, after the advantages of this experiment (as far as it went) had been acknowledged, by further appointments in Madras and Bombay; but this, after all, is merely an experiment, a nibbling at the subject, unworthy of so great an Empire, which cannot rightly stop until it has completed the experiment and brought it to its logical conclusion.

No system of recruiting can be thorough which does not embrace the whole of the Indian Empire and include every portion of it, leaving no part which would not come under the scope of some recruiting officer or other.

Apart from the possibility of having at any moment to largely increase the Native Army in the event of a war with a country strong enough to challenge our possession of India, from political considerations we shall always be bound to so distribute our recruiting of the native army that every race, even though they may be considered non-martial ones, shall be able to claim their due share in the maintenance of that proper balance of power which will be for many years to come necessary for the safety of our alien Government; it is therefore most necessary to duly consider the value of each important race and to never lose touch with those of any value for military purposes. It can, too, no longer be denied that even non-martial races can, with proper training and handling, be turned into material equal to their more martial brethren.

It seems to me, too, impossible to believe that the extraordinary disappearance of the fighting instincts of some of the older martial races of India is entirely due to a deterioration in quality of the grandsons of men who formerly fought so well for us,—a deterioration due to the advance of civilization and to more peaceful surroundings, and that none of this wonderful change has been caused by their having lost touch with the army, the only present outlet for the upkeep of military instincts; the authorities seem to have doubts on this point, since they have recently appointed recruiting officers to these races. It is a well known fact that it is only too easy to lose recruiting touch with any race or portion of a race, and, once other professions are adopted, only great patience and trouble can recover the lost touch. It seems to me extremely probable that this same thing would have taken place in the case of the martial races of the Punjab, if steps had not been taken early in

the day to prevent it, and what would have really been a loss of military touch would have by now been considered deterioration of quality due to continued peace; let us take the case of the Sikhs—but for the opportune mutiny of 1857 and the immediate cancelling by Lord Lawrence of the order forbidding Singhism with its subsequent support and encouragement in native regiments up to the present day, the warlike race of Singhs would long ago have all reverted to peaceful Sikhism, and most probably long ere this have been completely lost to the native army.

Again let us suppose, for the sake of argument, that loss of quality is bound to follow as civilization and peaceful conditions affect the martial characteristics of the fighting classes of India; are we, in consequence of this, to be continually seeking for other races outside India for our native army? I scarcely think any one would allow that this would be possible to do.

I venture then to suggest that the following must be accepted as absolute maxims in recruiting the native army:—

- (i) that the native army must, under any circumstances, be continued to be recruited from within the Indian Empire;
- (ii) that, therefore, touch must be kept with whatever material the Empire can yield at all costs, allowance being duly made for the political balance of religions and races, and for the future possibility of some sudden increase to the native army being required; and
- (iii) that the best must be made of this material by means of discipline and training, of a fair and equal roster for service, and of tours of service in the rougher parts of India for all in turn.

If the above maxims may be considered sound, then the argument for a thorough and systematic recruiting of the whole Empire in search of the best material that the political balance of races and religions will allow us to use, and the using of this material only, becomes proved.

And now, having endeavoured to prove the need of a Recruiting Department, I will turn to the lines on which it might be carried out.

I would not advocate simply extending the present system, as it now stands, but modifying it, for the following reasons: in the first place, the present system, even so far as it has gone, is not, I am constrained to say, popular with those officers, who would be the first to acknowledge the benefits of a good system, I mean commanding officers of regiments; there is undoubtedly a feeling of something like soreness amongst these officers, owing to the idea (however mistaken) that the recruiting of their regiments is now being taken out of their hands and given into those of a junior officer, as to whose possession of the special experience and ability necessary for passing the variety of recruits embraced in each recruiting district they are, perhaps naturally, somewhat sceptical; this being often aggravated by the knowledge that, under the present system, assistant recruiting officers of still less service and naturally of still less experience often have to perform this duty for them; and that the opinions of recruiting officers are now likely to overrule theirs on points of recruiting.

In consequence of this the former system, before the appointment of recruiting officers, of recruits being taken before the station staff officer of the nearest cantonment and being finally approved by the officer commanding that cantonment is apparently less objectionable to them.

In the second place, the present system of assistant recruiting officers is, I think I may say without fear of contradiction, unpopular not only with officers commanding regiments, but with the assistant recruiting officers themselves, and it cannot be considered exactly satisfactory from the district recruiting officer's point of view; commanding officers when ordered to supply an assistant recruiting officer invariably have the greatest difficulty in laying their hands upon any officer whom they can spare, and when their regiment has been deprived of the services of this officer for six months, have not the satisfaction of feeling that, at any rate, some advantage will be obtained to compensate for the present loss, in the gain of increase of knowledge to the officer sent; assistant recruiting officers being in no way selected for a natural taste for recruiting work, often find the work very distasteful, and even the keenest of them find it difficult to add to their knowledge in six months, as the district recruiting officer, though with the best intentions, can rarely do more than turn his assistant into a superior babu, leaving him in charge of the head office, whilst he himself goes out on tour; and to the district recruiting officer himself the constant six-monthly change of his assistant, just as he is getting into the work, is most disheartening.

The third objection to the present system is the too great extent of the present recruiting districts.

When the present districts were first portioned off, the very natural division of one recruiting officer to each of the particular martial classes selected for the experiment was determined on, and very excellent orders were issued explaining to these recruiting officers that they were by no means to confine themselves to the mere examination and approval of recruits, but were held responsible that they should acquire personal acquaintance with all parts of their districts, and should see that recruiting was carried on from those clans or tribes best suited for military purposes, at the same time they were to make a point of cultivating the acquaintance of the chief men of their districts.

Had recruiting officers been able to properly carry out these duties, they would have proved themselves not only invaluable aids to recruiting, but also exceedingly useful assistants to the Intelligence Branch; unfortunately, they soon found that owing to the too great extent of their districts they could not single-handed cope with even the least of their duties, *viz.*, that of examining recruits, in consequence of which they very soon had to be given assistants in spite of which help I can personally vouch for the fact that it is still impossible to do more than very partially carry out the more important part of their duties.

Such a large and difficult, as also important, subject as recruiting from this enormous Empire seems to me clearly entitled to the special services of a carefully selected senior officer of some standing, an expert,

as far as that can be hoped for, whose opinions would be likely to carry weight and respect with commanding officers, and an officer of this kind should be appointed head of the department at army head-quarters, his work to comprise the general supervision of recruiting for the whole of India, with its extremely difficult questions of distribution and allotment, requiring to be dealt with as a whole from some central position as to the broad heads of the quantity of the material, the varying qualities, and the keeping of the due balance between the various parts, etc.; under him, he would require four deputy assistant adjutant generals for recruiting, one at each of the command head-quarters, who would generally supervise the recruiting officers belonging to their commands, and would frequently consult in person officers commanding regiments, thus keeping thoroughly in touch with them in recruiting matters, at the same time assisting recruiting officers and being a link between them and commanding officers. Then in order to enable recruiting officers to thoroughly carry out every part of their duties and so to become really valuable aids in recruiting, I would reduce the size of their districts, so that in spite of any examination of recruits they may have to do, they would still be able to tour over their districts thoroughly and constantly and have a real touch with all parts of them,—to do this those districts in which much recruiting was done would have to be comparatively small, whilst those in which little recruiting was done might be considerably larger. As examples of what I mean as to size, I will take two existing districts of which I have had personal experience, namely, the present Sikh and Pathan districts, to make of these districts others of such a size that recruiting officers could carry out the examination of recruits without interfering with their tours over their districts and their knowledge of the men in them, each of the above districts would require to be made into two, each half the present size, each under a separate recruiting officer, that is to say, instead of one recruiting officer for the race of Sikhs there should be two—one to have charge of the Sikhs included under the heading of Manjha, *i.e.*, trans-Sutlej with head-quarters, say, at Mian Mir, the other to take all the Malwa Sikhs, *i.e.*, cis-Sutlej, with head-quarters at either Ludhiana or Ferozepore: in the same way I would divide the Pathan district into two,—the Peshawar district with the trans-frontier tribes belonging to this district becoming one district and the Kohat district including all the Khataks not included in the Peshawar district and with its adjoining trans-frontier tribes being formed into another district. I venture to say that there would be quite enough work in districts of the above size to occupy the whole time of one recruiting officer, and make him of far more value to the state than he can possibly be now with districts far too large for him to ever hope to thoroughly get into touch with: on these lines I would divide the whole of India, including Burmah, making some districts larger, but being very careful not to make any district of too great a size for one officer to be able to really become acquainted with it.

Then I would do away with the present system of assistant recruiting officers, and, instead, would suggest that officers commanding regiments have the power to send out British officers in charge of their recruiting parties, whenever they so desired, and that they should be encouraged to do so; these British officers to be selected by them;

these officers to go with their recruiting parties into the part of the country from which recruits are required, and to see that their recruiting parties work properly, assist them by their presence, perform the preliminary weeding out of recruits, and send in those they approve of to the nearest doctor for medical examination, the final approval being carried out under the orders of the district recruiting officer; this does not, of course, mean that it would be compulsory for commanding officers to send British officers in charge of recruiting parties, and, where they did not desire to do so, the party would work, as now, under the district recruiting officer; but whenever they could manage it, I think that commanding officers would be certain to avail themselves of such a privilege; British officers sent in such cases would obtain any assistance or advice they required from the district recruiting officer and would keep in touch with him, invariably notifying their presence and proposed plans to him, as their arrangements, though they should be given as free a hand as possible, must be, where desired, subordinate to his; in such a case a British officer would not be likely to be out on recruiting duty away from his regiment more than two months at a time, and, where necessary, he could always leave his party to complete their work under the district recruiting officer; he would, of course, be considered on duty, and would travel on warrants, and would have to be given some allowance when out in the district to cover the carriage of his baggage and other extra expenses, in the same way as assistant recruiting officers have now.

In this way regimental officers would have constant opportunities of greatly increasing their knowledge of the classes recruited in their regiments, and would, I feel sure, thoroughly appreciate such opportunities.

Recruiting officers should also, I think, be allowed a small permanent recruiting staff of four pensioners, one non-commissioned officer, and three sepoys, who should be given in addition to their pensions Rs. 10 a month and Rs. 7 a month, respectively; this would enable recruiting officers to send messages, when necessary, to recruiting parties and also to recruit small parties of recruits, when required to, for any regiment, which may happen to have no recruiting party out at the time; this small staff, too, would be of immense assistance, supposing that, in time of war, large quantities of recruits were required for whom it was difficult to send out large recruiting parties; to allow of the pay of these men, the staff allowance of district recruiting officers might well be reduced from Rs. 300 a month to Rs. 250 a month; on the other hand, in order to encourage recruiting officers to tour freely over their districts, they ought certainly to be allowed a scale of camp equipage equal to that allowed to all district officers.

I believe the above system would not only become popular with commanding officers, and be very satisfactory in its results, but would also decide absolutely how far the sources of recruiting in India are really becoming exhausted, and whether or not there are at present sources untapped which might be made use of; the value of the recruiting officer would be immensely increased; and a permanent spur

would be given to recruiting such as could not be obtained even by an increase of pay to the sepoy.

I grant that in the beginning it was necessary to work slowly, as until it had been shown to the Government of India that the extra money spent on recruiting was well spent and was necessary, a larger grant could not be expected; but, now that the Government of India has officially acknowledged the value of the work done, the experiment must be considered satisfactory, and should be carried to its logical conclusion.

Though the financial part of the scheme may seem to put it out of the question, it should be considered that it may easily save a far greater expenditure later, and is, as far as I can see, certainly the cheapest way to improve the Indian Army and bring it up to a standard, equal and serviceable throughout.

I am of opinion that were such a system to be adopted, every recruiting officer would discover in his district some material, in greater or in less quantities, suited to military service; and we should no longer be labouring under the uncertainty which undoubtedly now exists on this subject.

Then, too, I hope and believe it would be found that the Indian Empire possesses material sufficient to supply not only as large and serviceable an army as her needs are ever likely to require, but also to continue to supply those invaluable troops required by the needs of our Greater Empire.

Never shall I believe that the loan of soldiers from our martial races for service outside India is other than beneficial not only to India itself, but (I firmly believe it) to recruiting in particular.

The spirit of adventure and the other effects of travel produced by this foreign service are results of the greatest value which should not be lightly cast away; and before deciding to do this, let us first positively satisfy ourselves that the Indian Army cannot be kept up to strength in any other way; remembering that it is a fallacy to rely on the majority of those men who now elect for foreign service, encouraged by the high pay, being content to serve in the Indian Army on the present pay supposing foreign service was put a stop to.

Therefore, before taking any steps which would in any way tend to decrease the martial spirit of the martial races of India, let us try to improve our present system to its utmost.

*See May/June
Pioneer
Hillside 1899.*

AMBULANCE WORK IN HILL WARFARE.

(CONTINUED.)

BY AN ARMY SURGEON.

in Pioneer

Bearer Companies.—In the first part of this paper recent experiences were applied to elucidating general principles: but it will now be useful to examine the different parts of our ambulance organization as it exists, and the conditions to which they are suitable in hill warfare.

The term "Bearer Company" is not sufficiently understood by many soldiers; for its functions and equipment are different, according as it is used in hill warfare or in the plains against a civilised foe. I have known a principal medical officer who was frightened at the very sound of the word, and never allowed one to go out of camp in the daily operations against the enemy. Not to refine upon words, a bearer company in the hills consists of the *light ambulance transport* of a field hospital: *viz.*, dandies with their kahars, and riding ponies with their drivers;—detached under a part of the medical staff to serve and relieve the fighting line; the field hospital and its impedimenta of course remaining in camp.

Its express design and effect is not to cumber the fighting line as some generals imagine, but to receive, and disencumber it of all casualties with the utmost speed, so as to preserve intact that mobility of the fighting line which is so important in hill warfare.

It receives these casualties from the regimental medical officer, who, with his light stretchers, tends the actual fighting line on the hill-side, but who cannot stay behind with them and leave the firing line to advance out of sight without him. It is therefore a natural and indispensable link or connection between the fighting line and the camp, which steps in to relieve regiments and regimental surgeons in good time of their casualties.

Contrary to the hasty judgments of some, it is even more necessary and quite as useful, if properly placed, in hill warfare as in the plains. It is essential for it to be under a non-regimental medical officer with a free hand and a 'roving' commission, so as to be equally serviceable to all the units in the firing line.

When a force advances from camp on a reconnaissance, the bearer company marches in the rear of the troops.

Owing mainly to its being composed of undrilled men, its mobility is slightly less than that of the troops, and it is apt to fall too far behind, and should therefore always have a small guard or escort told off for it, which guard may be taken from the rear-guard of the advancing column. This is a point of importance often neglected.

By the time it arrives at the point of contact with the enemy, *i.e.*, the ascent into the hills, the combatant force has deployed all over the hill-side. The surgeon in charge on arriving at this point will do

well to at once gallop off to the general, who is usually in a central position directing the operations, and take his orders from the principal medical officer who will usually be found with the general. In the absence of the principal medical officer (see footnote*), he uses his discretion, obtains some inkling of the movements of the various regiments from one of the staff, and disposes of his company accordingly. Thus the bearer company at first takes up some central reserve position, either near the general, or near one of the batteries, watching the development of the action: care being taken to put them under cover when practicable. The surgeon should never, if avoidable, push the whole on into difficult places on the hill-side: but, watching where casualties are likely to, or have occurred, send detachments with a rifle or two of his escort to meet the wounded of corps sent back on stretchers. These are thereupon transferred to his dandies and ponies, given a little opium and stimulants and a field dressing if not already applied, and sent back to the position taken up as a centre. If the corps send down their wounded in dandies, he sends those corps empty ones in place of those filled.

He endeavours also to keep in touch with medical officers of corps by messengers, or in suitable cases by personally visiting corps in their various heights, so as to inform them of his company's whereabouts, and to hear of and remedy any hitches or blocks. Should a safe opportunity occur, he at once begins clearing his sick and wounded back, or on, to the camp, so as to be as free as possible for the casualties of the retirement: but this is not always possible. At any rate he must take care to send his massed casualties back, with a medical subordinate well in advance of the first retiring corps, so as on no account to block the way: obtaining from such corps a small escort party if necessary.

At this stage he himself takes all his remaining unloaded dandies and ponies, and assiduously watches the retirement, so as to relieve the retiring forces as carefully and quickly as possible of the casualties that now begin to occur. To this end, he retires a little in advance of the central line, taking advantage of cover in cases of delay, but being careful neither to get too far away to be useful, nor to stay so far behind as to become entangled in and hamper the firing line. Any unnecessary exposure of the bearer company, causing casualties in it, deprives it of its *raison d'être* as a reliever of the fighting line.

This caution must not, however, preclude him from exposing it, or portions of it, to long range fire, as is often unavoidable, and no exaggerated care for its safety can be allowed to destroy its prime

(* Footnote.—In the absence of the principal medical officer, who should take command of medical arrangements in action? It is obvious that if the next senior officer is a regimental surgeon, he must be with his regiment on the hillside, and cannot be held responsible for medical arrangements in other parts of the field. If therefore a senior medical officer is required, he must be a non-regimental officer, or be detached for the day from his regiment, as a member of the general's staff. But I have already shown that in the hills regimental medical officers should act under the orders of their commanding officer in action: so the scope of a senior medical officer in action is limited to the disposition of the bearer companies, the senior medical officer of which naturally takes the place of the principal medical officer, in his absence, as the deputy for ambulance of the general.)

purpose and tactical duty, of rapidly relieving the firing line of encumbrances : a necessity which requires its presence well within the field of action.

To avoid these extremes requires a wide awake eye and some judgment.

As he receives casualties in this way during the retirement, he must send on each case at once at a quick pace in the direction of camp, with a rifle or two of the escort.

He himself remains only with the empty ambulances, and gradually allows the various retiring regiments to overtake him, so that eventually he marches just in advance of the rear regiment, keeping near enough to be in touch with its commanding officer and medical officer, so as to be able to perform the same service for it up to the last, without actually hampering its movements.

This sketch of the bearer company's procedure is founded on common sense principles, and is confirmed by actual experience of its duties in action in the hills.

In the second Miranzai expedition of 1891 the principal medical officer always accompanied the general in the field, and he organised a light bearer company as here described, which did good service and was never any impediment to the fighting line.

If a bearer company is obtainable, it should invariably accompany as far as possible every moving force in the enemy's country: whether "fighting is expected," or the reverse. Fighting is always to be provided against in the hills by the wise and prudent, sometimes occurring when least expected by the ostrich-eyed.

In 1895 a surgeon was not allowed to accompany either of two parties proceeding from Gilgit to reinforce Chitral, on the ground that "no fighting was expected." Both parties were practically annihilated. About the same time, when the force holding Chitral fort was severely defeated, the medical officer there was only allowed to go out with them as an after-thought, as no fighting was expected. Luckily he went, and soon found himself in the thick of the unexpected fight, in which he deservedly won the Victoria Cross by saving the life of a wounded officer who had been left behind in the retreat.

On the occasions when "no fighting is expected," the troops do not leave behind their rifles and ammunition as useless; and it is equally unreasonable and suicidal to leave behind the bearer company, as has happened occasionally, even in the late disturbances. Even if no fighting occurs, casualties from sickness on the hill-side *always* occur, and must be carried.

The riding ponies of the bearer company here come in useful in getting these casualties out of the way, and are also suitable for wounds of the upper extremity or flesh wounds.

Each animal ought to have a separate driver. Otherwise if a string of animals has only one driver, one refractory animal causes delay to several disabled men, sometimes during a retirement when speed and security is of importance.

Besides, a man with fever or a wound requires at least one driver to himself to help him and keep his pony quiet. Moreover, with one driver to three animals, you cannot detach your animals for single casualties such as often occur. Lastly, three sick or wounded men are not mere pieces of baggage like three loads of *ata*, and whatever else in the establishment you want to cut down, economy is inapplicable here, because it directly affects the mobility of the fighting line as represented in its slowest factor, its sick and wounded.

During the last few years our medical administrators have succeeded in getting the military authorities to recognize the need for supplying all field forces with an ample supply of field hospitals, medical officers, and spare ambulances.

The Chitral, Malakand, Tochi, Mohmand, and Tirah forces were equipped on a justly liberal scale, very different to the parsimony of a few years ago. Instances in the writer's experience could be quoted, only a few years back, when a brigade was supplied with only a single section ($\frac{1}{4}$) of a field hospital, with one surgeon : this section having only about half its proper transport, and therefore having to leave behind a great part of its equipment for sick and wounded. In another instance a large force of five regiments and a battery was left behind after an expedition to hold the occupied hills, with only their regimental medical establishment and equipment, no field hospital or its bearer company remaining behind, though the force was scattered over a series of unfortified posts and was decidedly open to attack.

Contrast this with the medically prepared state of the Malakand garrison when attacked in 1897 : amply equipped with field hospital and staff.

Misplaced economy reached a climax in 1892 in the Isazai expedition, when field hospitals were almost dispensed with, until the occurrence of many casualties from sickness compelled the authorities to recognise that even a bloodless expedition requires ambulancing on the field hospital scale, to supplement and complete the regimental medical aid, which is cut down on service to a low scale expressly on the understanding that it will always be supplemented by field hospitals.

In 1891, 1892, 1893 and 1895 the writer was in some small expeditions attended with fighting and loss, in a remote part of the frontier, where no field hospitals were allowed. The difficulties in the mere transport of casualties to places of safety by extemporized ambulances, charpoys, and ponies, and the delays, and the lack of elementary necessities, were greater than can be believed by authorities who have never seen those barren, vast, and inhospitable mountain wilds.

This short-sighted starvation of an arm vitally required in hill warfare is now, I hope, a thing of the past. Some people think that there are too many doctors now-a-days in our field forces. But there are not too many, if more use were made of the field hospital surgeons, who are often left in camp during the daily reconnaissances. If an extra medical officer for each regiment so engaged were told off for the day when available, he could co-operate with the regimental

surgeon, whose regiment is often split up over a large area of ground: and probably this step would be welcome to field hospital officers, who sometimes see little of the fighting.

Similarly when, in camp, there is a glut of work for the field hospital surgeons by an accumulation of wounded, it is customary for regimental surgeons to come in and assist in the work. In these ways the respective advantages of staff and regimental medical arrangements on service in the hills are utilized and their respective defects minimized.

In the old days of regimental surgeons in the British Army, regiments had at least two surgeons apiece, one of whom could escape in the firing line and the other take over casualties from him. In the smallest fight, even a flanking or rear-guard affair of a single company, two medical officers are required, if available, for these two purposes, the firing line always retaining one for its immediate needs, while the other takes the wounded off his hands, removes them to places of safety, and, if necessary, takes them back to camp, or accompanies them to the base. In Colonel Kelly's force which relieved Chitral there were only two medical officers, which proved sufficient for these two purposes, whereas with only one great difficulties would have occurred.

As regards the proper place of a bearer company in a long spun-out line advancing, it is sometimes advisable to split it into two or three portions, even from the start. The leading regiment may be for hours completely out of reach of a bearer company placed at the extreme rear, especially in steep ground encumbered with baggage: and is unable to hand over its loaded ambulances to, or obtain empty ones from, the bearer company so placed. I remember a case in point: my regiment leading, at the moment that we were ordered to retire, we had no empty ambulances, and almost immediately a man was shot through the lungs.

The dandies of the bearer company were out of sight at what had originally been the tail end of the column, but now that retirement had begun had become the head.

We waited a little while, trying to recall a stretcher from the next regiment, we being now the rear of the column. But the fire continuing, to avoid further casualties, we had him taken up and carried by four sepoys nearly into camp. On another occasion I was in charge of a bearer company at the tail end of a column, 2 or 3 miles long, and found it impossible to get near the leading regiments so as to give them any assistance.

In cases like this, some people advocate giving a few spare dandies to go with each corps; but, as will afterwards be shown, the difficulty should be got over by a proper supply of regimental light stretchers, and there are other reasons against encumbering a regiment with any extra dandies. They hamper it in its movements and impair its mobility; moreover, they put the single regimental surgeon in the impossible position of both keeping up with the fighting line, and at the same time remaining behind with the wounded. These seem to be conclusive objections to spreading a bearer company in pieces distributed to each corps.

On the whole, it is better in such cases to have three bearer companies or portions of them, each with its own medical officer : the first in the centre of the column, after the two or three leading regiments which bear the brunt of the fighting ; the second at the rear of the main body, ahead of the baggage column ; the third with and just in front of the rear-guard, to ambulance it and the baggage column ; and in case of completely detached regiments, to always give them spare dandies with a second medical officer for the occasion.

Bearer companies do not, but ought to, have a supply of light stretchers in reserve, carried on ponies : for occasionally the company has to negotiate ground unsuitable for dandies or ponies, and then its whole *raison d'être* of relieving the fighting line of casualties, and especially of replacing occupied regimental stretchers by empty ones, must be lost, unless it always has this resource in reserve, so as to enable it to keep near the troops.

Importance of not lumping together the different parts of "the hospital" on the march.—The general term "hospital" in a force advancing in the hills and not encamped includes two parts:—

- (1) The hospital proper, consisting of baggage, tents, and boxes.
- (2) The sick transport of the hospital, or bearer company empty.

It will be convenient to add :—

- (3) The sick convoy, or bearer company loaded. By combatants these three parts are often confounded on the march under the term "hospital," and allotted a fixed place in the line. Yet they have quite different rates of speed, tactical purposes, and general value : and require different degrees of escort, and sometimes different places in a marching column.

(1) *The field hospital proper* is simply a part of the brigade baggage, usually placed first in the baggage column on account of the importance of its arriving early.

It requires, what it does not always get, an armed guard to load, assist it on the road, and unload it, the same as all commanding officers detail for regimental baggage. The non-provision of such an assisting party sometimes causes blocks in getting out of camp, or on the line of march, hampering not only the hospital, but all the baggage behind it as well.

(2) *The empty bearer company*, properly considered, has no real impedimenta, marches with and as fast as the troops, avoiding only the actual heights. Its place has already been considered : it requires a small armed guard to assist and defend it, to be supplemented when casualties occur.

(3) *The sick convoy*, which is what a portion of the bearer company eventually becomes, having loaded ambulances is slow in pace, and requires a larger guard, both to assist and prevent blocks, and to safeguard the lives of the disabled men in their passage to camp. It is

not advisable to hamper it by lumping it with (1), but to place it in the main body and nearer the head than the tail, so that the rear of the troops, if attacked, may be clear of the duty of defending it.

I think it would be a good thing if every field hospital on mobilising were given a permanent escort of rifles from some regiment not mobilised, to be placed under the medical officer in charge and accompany the hospital throughout the expedition. Besides the escort duties above described, they would be useful in loading and unloading, looking after hospital stores on the march, pitching camps, etc., for which purposes the field hospital surgeon has at present only a rabble of undisciplined drivers, kahars, and other hospital servants. The permanent addition of forty or fifty disciplined soldiers, whose services in camp could be utilized for general purposes in numerous ways, would enable field hospitals to attain something of the same smartness and independence on the march and in action as regiments or batteries.

Place of regimental surgeons on the march and in action.—Generally speaking, he should place himself, not necessarily at the rear of the regiment, but where he can most quickly ascertain the movements of the various parts of the regiment, and discover and reach casualties in any part of the regiment.

His place will therefore vary with circumstances, as he ought to have a free hand to carry out his primary responsibility to the commanding officer for ambulance matters. Usually he should at first accompany the commanding officer, like the adjutant, and thus be in a position to know what was going to happen, ready to unload and send off his stretchers or dandies with each party without delay, and to act, not as an independent civilian, but as a useful and integral member of the commanding officer's staff, and directly under his orders.

Commanding officers should be expected to understand the ambulance arrangements, realise their tactical importance, and take due interest in them as part of their duty.

This will give unity, discipline, and a spirit of intelligent co-operation suitable to even small matters in the face of the enemy.

Place of regimental dandies.—In an advance their place is in the rear of regiments, with four rifles behind them to keep them up, assist when loaded, and act as a guard.

In a retirement under fire, I have heard differences of opinion expressed by combatant officers as to where they should be. If the regiment is spun out in a long line or scattered, the converse to the above position is unsuitable (*viz.*, what is now the front), as it is too far from the rear where casualties occur. Delay in lifting and moving casualties is now tactically much more serious than in an advance; and it is not so easy to bring kahars back through a regiment on a narrow path to the point of danger. On the whole, it is now best to keep them just in front of the rear company, or rather at the rear of the main body, keeping the going fast and halting at intervals under cover to await the arrival of the rear company from point to point: being near enough to give succour at once, get out of the way and not obstructing

the movement of retiring. At least this is my experience. It may be a question whether dandies should ever be placed near the rear of retiring troops: but until regiments are properly supplied with sufficient light stretchers to obviate the need for their presence, they must sometimes be thus used.

Ought dandies to be abolished for hill warfare?—I think not, because they supply needs not to be met, in this country, by any other contrivance. It gives easier lying than a stretcher. It has good cover from rain and wind and, still more important, from sun: a thing little considered in winter expeditions, but of prime importance at all other seasons. It suits the native bearers, being borne on the shoulder, and its burden is hung so low that the centre of gravity cannot be easily upset even on bad ground. Apart from ambulance needs in action, the sick and wounded have eventually to be carried several marches to the base in comparative security along more or less level paths, for which the dandy is well suited. Soldiers or sepoy, who might carry a stretcher more easily, cannot be spared for this latter duty, so it is best to leave the kahars the vehicle to which they are accustomed. A dandy, with the right sort of kahars, can go as fast as a regiment, even when loaded, on level ground, and can also go over far more difficult ground than many officers think, at a fair pace, with a little extra assistance. I once took an officer with a gunshot wound of the knee in a dandy for 54 miles over a very mountainous tract without roads. We passed sometimes along narrow ledges of rock on the face of precipices, and crossed and re-crossed a big river frequently on a skin raft we carried with us. We sometimes had to place men on ledges below the ledge we were traversing on precipitous ground, to steady with their hands the feet of the bearers. We took eight days, but we thus escaped from a position in which we had been confined, for want of roads, for three months; and a little later I took the same patient in a dandy over a pass deeply covered with snow and 14,000 feet in altitude.

This shows that very bad ground is not insuperable for dandies, given time and assistance; though it could hardly be done in the face of the enemy.

The last reason for not abolishing the dandy is that it is a perfectly suitable mode of conveyance in warfare on the plains, on the line of march, and in cantonments.

There are times, as in the retirement down the Bara valley, when, on account of the nature of the obstacles, the pace required, or because soldiers are used as bearers in an emergency, it is necessary to carry a dandy like a stretcher by its four corners on the bearers' shoulders, the pole and purdah being easily detached.

The weight of the dandy (about 60 lbs.), and its clumsy appearance, are often abused. But I doubt if its weight can be reduced without impairing the strength requisite for the severe wear and tear of hill service: and its form, *e.g.*, its long pole, is a defect of its qualities.

I think then bearer companies should retain dandies as their main form of ambulance: and that regiments should retain their two dandies, leaving them below when height crowning commences.

F

It will always be an advantage to the regiment to have its two dandies not far away, to send down bad casualties to; the dandies can be left with two or three rifles under cover and under the protection of the nearest portion of the force remaining below.

Regimental stretchers.—The removal of casualties by their comrades on the actual heights, the point to which all other ambulance questions are subordinate, has been kept for consideration last, because no practicable suggestions can be made upon it until the general tactical disposition of ambulance in hill warfare has been clearly explained.

The present equipment per regiment in the field of four stretchers, each weighing 32 lbs., is obviously inadequate: it does not even make one per company, though every company is often on a separate height. and as every man of experience knows, there is often no communication possible between one height and another.

For example, during the hostilities in the Khyber last winter, day after day the picqueting regiment had to split itself up into a dozen or more small parties, some on precipitous heights, others in villages or nullahs, often concealed from view of the head-quarter detachment, the whole spread out over a valley 6 miles long by a mile or more broad, and all liable to injury by sniping. What good are four stretchers here? Again, on Christmas day a regiment with its stretchers distributed over several parties occupied the Aspagma heights, a ridge of precipitous hills on the right flank of the entry into the Bazaar valley. One party having one stretcher, on reaching an advanced isolated position was attacked by a party of the enemy who commanded it from a height above, and two men were mortally and a third severely wounded. The ground was very bad, and the position of our wounded was difficult to reach, as its approaches were commanded by the enemy. The only other stretcher obtainable was taken to the party, and they were brought back in safety, but the third man, who was wounded in the thigh, had to get back on foot. If any further casualties had occurred during the rest of the day, the regiment would have been in a predicament, at the top of the mountain, several miles from camp, with no further means of transporting those disabled. Fortunately the enemy had gone on to worry the baggage column of the brigade below.

Probably many officers with greater experience during the late operations will be able to recall similar instances to the above, sometimes with disastrous results.

We clearly ought to have as ample a means of removing casualties present in the ranks as is consistent with the unimpaired mobility and efficiency of the regiment as a whole: for which object the first principle must be to use always the comrades of the wounded as his carriers, and depend on them as the first line of ambulance in hill warfare.

Field stretchers should not be carried by hand before the nature of the ground compels it: regarded as regimental equipment, they are essentially in the nature of a *reserve*, carried for possible but not certain contingencies. They should therefore be carried, like the first reserve of ammunition, on mules, both on ordinary marches and in mountain

warfare: until actually required for use. The field stretcher weighs 32 lbs., and there is no sense in loading a particular set of sepoys with an extra 16 lbs. a piece in addition to their arms, when animals would do as well. Besides, why should one particular set of men be perpetual load carriers for their comrades? No wonder there is no competition for this duty, either in peace or war: nor is it surprising that the trained stretcher crews, whom medical officers are periodically reminded to keep up, cannot be really maintained owing to each man taking the first opportunity to get off this service. Animals should be used for economy's sake: for it is surely uneconomical to tire the bearer by making him carry the empty stretcher, long before the extra strain of carrying it loaded comes upon him.

There is a still stronger reason against training particular men as stretcher bearers: and that is the practical experience that, in the sudden emergencies of casualties on the hill-side, the necessarily few trained bearers are rarely to be found on the right spot: so that in reality the wounded men are and must always be carried by their nearest companions.

Recognizing this fact, in some regiments all native officers and non-commissioned officers have been instructed in the simple and easy business of unfolding and folding a stretcher, placing a man on it, tying him in, and carrying it when loaded: and it is their duty to instruct their sections and companies in this duty. The complicated and ridiculous stretcher drill of the regulations has much to answer for.

It was invented twenty years ago by some too energetic medical officer, and is paraded at assaults of arms to the gratification of over-military surgeons, and soft-hearted generals, and it has tended to withdraw this simple duty of a soldier into the mysterious domain of a technicality. But when its real application in actual hill warfare (too often forgotten in parade ground exercises) comes to the test, experience shows it is as unnecessary as it is impracticable.

I think war is too arduous and serious a business to admit of shams and shows without utility: and we should get rid of this extraordinary pseudo-drill, hitherto seriously practiced by a select few but never applied where the bullets are flying, and we should instead teach all soldiers to pick up and carry their wounded in their stretchers themselves. Let all combatant officers be fully acquainted with the way to do it, which can be completely learnt in ten minutes, and let them be made responsible for their men knowing how to do it too. It does not require technical practice for a man to walk slowly when carrying a loaded stretcher, nor when lifting his own wounded comrade to treat him with gentleness and care.

The light 20 lbs. stretcher already in partial use, or improvements on it, should at once supersede the old thirty-two pounders, which should be collected and burnt as soon as possible: otherwise they will continue to figure for years in our frontier wars. Some of these in the late war were without even the straps indispensable for lacing a man in on the hill-side.

A still lighter stretcher, simple in construction and use, has been devised (I think by Captain Milne) and used by many regiments of

the late force in Tirah: weighing about 15 lbs., and strong enough for hard usage in the hills. Two per company, or sixteen altogether of these, should be carried on two mules with the first reserve ammunition. When any section, half company or company is told off to crown a height, one or two should then and there be taken from the mules and carried by hand with it. Each stretcher is carried by one sepoy. He might be allowed to hand over all his ammunition except ten rounds, so as to lighten him for the extra weight, and should sling his rifle.

Sixty rounds weigh $5\frac{1}{2}$ lbs., so that he would then have only an extra $9\frac{3}{4}$ lbs. to carry: and if two men were told off to carry each stretcher, taking it alternately, the extra weight would hardly be felt. Possibly also the stretchers themselves can be still further lightened.

I do not think it will be practicable, in view of necessary mobility and immediate offensive strength, to exceed the numbers above proposed (two per company) of ready-made stretchers. But there still remain those cases, so frequent in hill warfare, when even a single section or half company gets into a tight place and has several casualties thrown on its hands at once.

In a retirement especially such an occurrence will always multiply itself quickly and bring the party to a standstill, unless the most effectual means that foresight can devise have been taken to provide for this emergency.

The stretchers are filled, and more casualties occur: what then?

Some extemporised means must always be at hand for making a stretcher out of the articles carried on the soldier's person. In proposing any such device, the essential things to be kept in view are—

- (1) To use, if possible, articles actually present for other purposes.
- (2) Any extra gear proposed should be adjustable with the greatest simplicity and ease to articles always present.
- (3) The reduction of such extra gear to the smallest compass and lightest weight.

In devising any such makeshift, to begin with we must remember we neither want nor have any power of making an ideal stretcher with the maximum of comfort and safety that ingenuity can devise. We are on the hillside with our regular stretchers used up: we merely want a temporary means of removing a helpless living burden from the clutches of the enemy with the utmost speed, and of relieving the firing line of the encumbrance which is destroying its mobility, and interfering, in the mind of the commander, with those tactical measures on which the whole party depend for success and safety.

Carriage in the arms of a comrade, or of several comrades, requires no apparatus and no preliminary delay, and has often to be resorted to.

But besides the discomfort to the wounded man (which however, in such an emergency, is greatly preferable to what he escapes at the hands of the enemy), there are great drawbacks to this mode of carriage in the hills.

The sharp corners, limited space, insecure footing, and ascents and descents of broken ground, make progress very slow for a heavily laden man who is unable to use his hands to help him, occupied as they are with his living burden. Free hands are of vital importance to the rapid and safe progression of a loaded man on the hill-side, so as to steady himself when passing obstacles. It is also noteworthy that big men, when completely disabled, are difficult to carry on the hill-side, out of all proportion to the mere extra weight of their bodies as compared to small men. Of course extra length is a great hindrance in negotiating corners or steep places: but besides this, the greater the number of men (more than one) required to carry a single disabled person, the greater the difficulty experienced, owing to the impossibility of all getting a good footing.

Small men, such as Gurkhas, are usually better carriers for their weight than big men like Sikhs: and consequently two of them, or even one, can carry a disabled comrade with comparative ease and speed over difficult ground.

Some kind of rest, to support the burden and sling it from the shoulders of the bearers, is therefore required to give them free hands and enable them to move quickly. It should be made of some flexible material, taking the shape of the person carried, with a couple of tails at each end to knot over the shoulders or chest of the back and front bearers, respectively, and carry the weight. This has the advantage over a rigid stretcher made with rifles (which may be more comfortable to the patient) that it has no corners to impede it in being carried down steep slopes, over boulders, and round spurs, and also that it has no separate parts to be fitted together and is immediately available for use when speed is of vital importance. The weight is securely slung from the bearer's shoulders, and their arms are left free to help themselves in bad places.

In the British Medical Journal of July 9th, 1898, a contrivance of this kind was described, used by the Americans on shipboard during the war. It consisted of a piece of canvas, at each end of which were hooks which engaged in a collar worn on the neck of each of the two men who carry the stretcher and its wounded occupant. The difficulties which impede the carrying of an ordinary rigid stretcher on shipboard are the same which we encounter on the hill-side, *viz.*:—

Sharp corners, limited space, insecure footing, and ascents and descents.

It therefore seems excellently adapted as an emergency stretcher in hill warfare, especially for British troops, substituting the knotted tails for the hook and eye arrangement of the Americans, so as to avoid the need for special gear other than the single canvas, and to enable it to be carried by any soldier.

It could be rolled like a great coat, and carried by every fifth or tenth man, with a reduced number of rounds to compensate for the weight.

For native troops, in one regiment the puggri alone, folded into a thickness of three folds, has been adopted and used as an extempore

method of slinging and removing a wounded man. The two corners at each end are gathered and knotted together over the shoulders and chest of the two bearers. By this means two stout sepoys, with arms slung, can carry a man, each having free hands, and can, without any delay, put him down and use their rifles if required against the enemy. Captain Newman thus removed the late Major Taylor on the Buddhist road from the place where he was mortally wounded in the attack on the Malakand.

These two services, for British and native troops, respectively, will enable two men to carry a third with as much ease and speed as can be expected, at a pinch: but of course there would be other helping hands to give assistance at the sides in difficult places: as it is not only the surgeon's, or the bearer's, business, but everyone's business, to lend a hand in such difficulties.

A rigid apparatus will only be possible when time or the level nature of the ground admit, and the attentions of the enemy are not urgent.

It might be made by two rifles tied into the sides of the canvas by stout strings in its edge, and these would then form the poles of the stretcher. The defect of a rifle for this purpose is its shortness, being only 4 feet 1 inch as compared with 5 feet 8 inches, the average length of a man. But they are the only rigid poles available, and they will give length enough for a man's body, in wounds of the trunk, his legs hanging over from the knee: or for a man's hips, thigh and leg, in wounds of these bones, his body sitting up and resting against the head bearer.

Two light crossbars of wood or aluminium, one for each end, might be devised to hold the muzzles and stocks respectively apart, by clamping on to them at their ends by a bolt.

When the folded pugri is used, it would further require to be fixed to the rifles, after folding its edge over on each side, by a few double bobbins, half transfixing the fold and half clamping these from the opposite side by a spring action.

These latter suggestions, though I believe they would be found simple, light and easy to apply, may not appear so, and as they require the provision of special articles, may not commend themselves to the judgment of all: but that some extempore means of carrying wounded is urgently required to provide against disastrous blocks, the experiences of Maizar, Saran Sar, Waran, Shinkamar, and the Mahmud valley abundantly prove.

Man and

Clearing of field hospitals.—For the purpose of maintaining complete mobility in a force advancing from camp to camp, it is of tactical importance to keep passing the sick and wounded as fast as they occur from field hospital to field hospital away from the front down to the base. On no account in any forward movement should a single sick man be taken on.

Even when by forethought all casualties down to the day before starting have been sent down, a difficulty usually occurs on the morning of the march, because of sickness occurring up to the very

hour of starting. If the camp left is still to be maintained as a communication post, these can be handed over and left without further trouble. But if it is to be completely evacuated, arrangements must always be made beforehand for transport and a guard, to take any unexpected casualties back to the next camp on the line. This is sometimes forgotten.

It is also obvious that the brigade dandies should not, when avoidable, be used for carrying sick down the line of communications, even for a single march, as they may be required for their proper purpose in the bearer company ahead any day, and their absence may hamper the force in its daily work in the hills. The line of communication posts should send on their dandies, when required for sick convoy work, by previous arrangement, since they can better be spared for this purpose.

On the other hand, in clearing advanced hospitals it must be remembered that it is dead against the surgical interests of the sick and wounded themselves, and often dangerous to their lives, to hustle them back from camp to camp, especially in the early stages of acute disease, or in the first few days after the infliction of wounds, when rest and immobility is of great importance.

In this dilemma, when the tactical interests of the whole force are opposed to the individual interests of the disabled, the former being the greater interest must prevail as a rule.

But places and cases often occur when it is fully allowable to let the sick and wounded rest in advanced positions, such as forts, and fairly secure and permanent camps, which will anyhow, apart from the sick, have to be held for some time.

For in such cases no tactical interest is sacrificed by considering the welfare of the disabled first of all. Whenever this can be done, even for a few days, the gain to the sick and wounded is great.

The principal medical officer and general in all these matters, as in all others connected with soldiering, have a common interest and duty.

Summary.—I have endeavoured in these two papers to prove and illustrate the following features in mountain warfare. Catastrophes are mainly due, after deducting tactical errors, to the necessity for at once removing casualties from the hill-side as they fall.

This necessity is a peculiar feature in our hill warfare, and it ought largely to influence tactical movements in the field in their conception, as experience shows that it often modifies or renders them abortive in their execution.

Consequently the removal of the wounded is a tactical duty to which the careful attention of generals and of all the combatants of the army is due.

Conversely medical officers, on whom falls the general direction of this duty, are necessarily interested in the general tactical success of the combatant movement, not only as individual units under fire, but because of its reciprocal bearing on the success of their particular work in action.

There is a marked tendency for casualties on the hill-side to multiply themselves in a high ratio on account of the mark offered by groups of men carrying the wounded, and the slowness and difficulty of the procedure.

This feature is comparatively absent in the warfare of plains and of civilized opponents.

This feature signally hampers the mobility of our troops in mountain fighting.

Mobility being always of prime consequence in the face of the enemy, it should be a distinct tactical aim of commanders in hill warfare to avoid casualties, because they destroy mobility; whereas in civilized war a few casualties—more or less—are of no consequence, because they do not affect mobility. The bravest and most enterprising commanders in history have often been the most sparing of their men, in the sense of avoiding unnecessary casualties by adapting means to ends.

For the sake of speed and other cogent reasons, the wounded should always be removed by their nearest comrades, who form the first line of ambulance, and who should bring them to the bearer company or second line of ambulance. The task of the latter is to transport the wounded back to camp.

No non-combatants or followers (with a very few exceptions) should be employed in the fighting line: and whenever it is found advisable to diminish or dispense with followers, the comrades of the wounded must be prepared to act also as the second line of ambulance and transport him back to camp. The depletion of the firing line, by using a man's comrades to carry him out of action, is of little importance, provided no tactical errors have occurred. Medical officers should be more fully and invariably informed of the tactical dispositions and intentions of the day, so that they may more intelligently and usefully adapt ambulance arrangements to the general design. The removal of casualties from where they fall can be safely performed by all soldiers, and the immediate presence of a surgeon is not generally necessary, even on account of hæmorrhage.

It is of vital importance not to delay this removal for the sake of dressings, and no harm is suffered by the wounded man for this temporary neglect.

An argument has been outlined showing that for success in all war, but especially in the hills against a rude foe, soldiers must be self-complete and self-sufficing, even to the extent of being temporarily their own surgeons: and that over-specialization in the field is a mistake, owing to the primitive conditions of violence, isolation, and movement obtaining.

Conversely the same argument may be extended to the desirability of making all surgeons in the army to some extent trained combatant officers also.

Bearer companies, the second line of ambulance, are an essential part of our organization in hill warfare. They are not intended, even in civilized war, to carry off the wounded under fire, but to remove

casualties after the action is over. The latter function being not permitted by the enemy in hill warfare, the hill bearer company receives casualties from the fighting line and takes them home.

Their field duties have been briefly described.

Bearer companies must always have their own medical officers, and must never be too early split up or doled out to particular regiments, since this will destroy the free mobility of regiments.

Single-handed regimental medical officers cannot, while acting in that capacity, supervise the wounded far back from the firing line: nor can a regimental surgeon, while acting in that capacity on the hill-side, do duty as senior medical officer to a brigade.

Regimental medical officers should act on the staff of their regimental commanding officers in direct subordination to them.

Dandies are still required in hill warfare, and have many good points.

Regimental stretchers must be lightened and increased in number, and all soldiers of all ranks taught simply how to use them.

If possible, some simple sling or extemporised stretcher must be devised for a crush of casualties in a tight place. Lastly, in maintaining the general rule of rapidly and continuously clearing the sick out of advanced field hospitals towards the base, a tactical necessity opposed to the surgical interests of the disabled—opportunities for legitimately relaxing this rule should be carefully looked out for and seized.

Conclusion.—In this paper I have only attempted to deal with those leading points of practical ambulance work in the hills which are of interest to all soldiers.

Technical experiences or suggestions would be out of place in a non-medical journal: and from want of space such questions of medical organisation as have no special bearing on hill warfare have been excluded from consideration.

Every war gives rise to a crop of criticisms, often futile and ignorant, on the part of war correspondents, newspaper writers, and even soldiers unused to the grim realities of war, on supposed imperfections of the medical arrangements, evidenced by roughness and delay in the treatment of the wounded. These fastidious critics seem to forget that war will always be a hard unsentimental business, in which pain must be borne as well as inflicted. The perfection of medical arrangements is strictly curtailed and limited by tactical, rather than by financial, considerations. It is unpractical to expect to find a medical officer with all the resources of a London hospital at the heels of each of several hundred soldiers spread in small parties over many acres or miles of rugged ravine-divided precipitous mountains in an enemy's country where our success depends on transport being reduced to the finest minimum. Medical aid in war is necessarily a compromise—a struggle with the most untoward circumstances: and I hold that a man wounded on the hill-side is *lucky*, and has received the best ambulance attention, if he is saved from the enemy's hands by being removed alive to a place of safety, even if it be at some discomfort and without

dressing his wounds: and in this paper this is the main end to which attention is invited.

On this ambulance question the personal experiences of individual surgeons are rarely published. The despatches of generals are too much occupied with other matters to include more than a cursory remark on ambulance defects. Principal medical officer's reports are mainly devoted to sanitary and statistical matters.

Newspaper correspondents, who allude to ambulance matters, usually confine themselves to exaggerating some picturesque incident and drawing a hasty and erroneous moral therefrom.

I have therefore drawn my instances mainly from my own experience, as it was the only field of illustration open to me.

I do not think that the tactical importance of ambulance work in hill warfare has been here exaggerated, though hitherto it has never been considered by most soldiers as a tactical matter at all.

Military tactics being reasonings of common sense assisted by experience, it is open even to a non-combatant to draw lessons from the experience of such events in hill warfare as come more particularly under his eye. In any case I claim for medical officers a general interest in tactics which all officers in the firing line must possess, and should be taught to improve.

If you shut off your surgeons into an iron groove of rigidly restricted specialism (so unsuitable to, and out of harmony with, army conditions, especially in the field), you will find their organisation and action in battle following a narrow channel regardless of general considerations and of what may be called tactical economy: and you will perpetuate the unpractical spirit which accounted for, if it did not justify, this crushing criticism by a general in Egypt, given before the Camperdown Commission: "I have had many foolish and impracticable suggestions from a principal medical officer, but never once a useful or a wise one."

Possibly on his part this general was foolishly ignorant of sanitary and ambulance matters: for principal medical officers and generals are, like other men, good and bad. But it is clearly a good thing for combatants and surgeons alike to understand each other's business, not with a view of one interfering with another's preserve—the suspicion of narrow and selfish minds—but of co-operating in an end common to all, namely, the efficiency of our men and the success of our arms.

The profession of arms is, and always will be, essentially one of inflicting and healing wounds, and is therefore bound up in a natural and binding contract with that of medicine. Nor can any modern and artificial separation of inflictors and healers, though necessary *to a certain extent* to ensure perfection in both arts, do away with this close and ancient tie.

Both classes are interchangeable at times: both are liable to receive and have sometimes to inflict gunshot wounds: both must assist in the alleviation and rescue of the disabled: and both should primarily have the training and share in the duties of soldiers. The profession of

arms may indeed be said to be inclusive of the art of medicine, just as it is of any other art or craft, such as engineering or signalling, which contributes to success in war. But this reflection cannot here be followed up to its legitimate conclusion. It may, however, be noted in this connection that the Geneva Convention, often so perniciously used to widen the artificial gulf between surgeons and other officers, is in many respects a big piece of eyewash intended by well-meaning persons to remove, but serving only to hide from enquiry and remedy, some of the painful aspects and penalties of war. Its specious and unpractical sophistries, "made in Germany," even in civilized war, cannot stand the test of facts (bullets of long range being no respecters of persons), and are totally inapplicable to Indian warfare, with which alone we are concerned in this country.

Again, to meet in advance another objection, although the surgeon's *art* is essentially a beneficent one, it is illogical to attribute to the surgeon an exclusive humanitarianism separating him from his equally humane brother officers. War, with its accessories, is a public end with which individual philanthropy has nothing to do. Similarly the essentially constructive art of the engineer is devoted, where the enemy are concerned, to destructive uses.

Lastly, whoever thinks undue importance has been here attached to the rôle of ambulance in hill warfare, should reflect on the powerful *moral effect* of a well-organized system of succour on the minds of combatants of all races.

If the spirit of stubborn endurance and fearless self-sacrifice that characterizes our army can be in any way strengthened, it will be by the assured confidence that the best possible means of saving the disabled from the clutches of the enemy, with the least advantage to the latter and the greatest security to his unharmed comrades, have been devised and adopted, and that all arms and ranks are familiar with this tactical duty in peace and in war. This moral effect would not be lessened by the knowledge that those on whom this duty chiefly devolves in the presence of the enemy were soldiers in training as well as in title—a desideratum that will some day be attained by a more intimate association of army surgeons in the ordinary duties of military training, in health and in cantonments, as well as in sickness and in war.

On the other hand, the simplification of first aid and ambulance suggested in this paper, bringing these things within the duty of soldiers of all arms, is in no way derogatory to the prestige of the surgeon's art.

It neither deprives him of the honour of superintending these matters in the firing line, nor curtails those many spheres of duty where his skill as surgeon and sanatarian, as an expert in the mental and physical well being of masses of men, both in peace and war, after and before the fighting, will always be of signal service to his comrades, and eminently necessary for the health, military efficiency, and morale of the whole army.

BATTLES OF THE DECCAN.

BY CAPTAIN R. G. BURTON, 1ST INFANTRY, HYDERABAD CONTINGENT.

I.—Assaye.

When contemplating the scene where some great historical event has been enacted, one cannot but feel a certain measure of awe in recalling the past, proportionately deep according to the nature of the incident, the personality of the principal actors, and the number of years that have elapsed since the occurrence, for the flight of time casts a glamour over the records of history.

Should the locality be that of a memorable battle, in which, perchance, nations have contended for the mastery, and the stability of thrones or the fate of empires have depended upon the result, an effort of the imagination will enable one to conjure up the leading personages in the momentous drama, pale phantoms of the past, and to re-assemble in fancy the armed hosts that met on the field of action. The surrounding scenery has remained, it may be for many generations, undisturbed by the clash of arms; the participators in the drama have, perhaps, long since all passed away into the Great Silence; the fields are being tilled, and the labourer is at work all unconscious of the events that have taken place on the historic ground where he now pursues his peaceful avocations. The quiet hamlet slumbers on the bank of the limpid stream that once ran red with blood; the bending corn waves over the plain that shook with the tramp of armed battalions and the thunder of charging cavalry, and no unwonted sights or sounds disturb the quiescence of a landscape that was once torn by the death-dealing missiles of contending hosts. Perhaps such undisturbed and peaceful surroundings enable one to picture the past more vividly, and assist the panorama-like unfolding of events before the mind's eye. It may be considered that the subject I have chosen for this paper is too well-known; that the details of the battle of Assaye, ranking as it does among the foremost achievements of all time, are too familiar to need any further description. Yet, I venture to assert, such is not the case. I have met with few who could point out on the map the locality where the conflict took place, whilst some appear to be uncertain as to whether the British troops on this famous occasion were commanded by Clive or Wellesley, or whether the opposing force was composed of Mahrattas or the army of Surajah Dowlah.

Certainly the details of the action have been related over and over again, and may be read in any history of the times. But to my mind events of such transcendent interest will bear repetition, and when recalled upon the field of battle, as I have lately had an opportunity of recalling them, they appear to me to have an additional attraction.

This was not the first occasion on which Sir Arthur Wellesley had shown some promise of his great future, for he had already exhibited, at Seringapatam and at Ahmednagar, some indications of the genius that was to carry him successfully through the long and arduous campaigns of the Peninsular War, and culminate in the overthrow of Napoleon at Waterloo.

The situation previous to the battle of Assaye requires some explanation. In May 1803, circumstances which it is unnecessary to recapitulate had, after fruitless negotiations characterised by their usual duplicity on the part of the Mahrattas, led to an outbreak of hostilities with Scindiah, in conjunction with whom the Rajah of Berar took the field, and threatened the territories of our ally, the Nizam of Hyderabad. After the fall of Ahmednagar, the allied Mahratta chieftains set their armies in motion. Wellesley, with a force of some 16,000 men, marched against them, and on August 29th entered Aurungabad without opposition, having with difficulty crossed the Godavery river, at this time swollen with monsoon floods.

Scindiah made a movement to threaten Hyderabad, and Wellesley advanced to protect that city in the interests of his ally, whose territories had been invaded from the northern border, detaching Stevenson *en route* to effect the capture of Jalna.

Assaye lies some thirty miles to the north of Jalna, which latter place was at that time a considerable fortress, and subsequently became a large cantonment, but is now garrisoned by only one infantry regiment of the Hyderabad Contingent. The general character of the surrounding country, after passing beyond the low, table-topped hills in the vicinity of Jalna, is that of an undulating wilderness of grass-land, sparsely grown with acacia bushes, and at times broken by patches of cultivation. As one descends into the river valleys, however, the increased fertility of the soil admits of a wider extent of cultivation, and the arid grass-land gives place to a rich area of wheat, cotton, and millet crops, varied by fields of gram and linseed.

The approach to Assaye from the south is across such a country, the ground on the hither side being somewhat higher than that between the Kaylna and Juah rivers. These streams flow generally in a rocky or sandy bed, and have a somewhat tortuous course. Their banks are as a rule steep, but are passable at many points, or would be easily made so by ramping. Their margins are cut into by innumerable fissures, and the ground in the vicinity is generally intersected by many nullahs, some of considerable breadth and depth. Except during the rainy season none of these smaller Deccan rivers present any great obstacle to the passage of an army. By December their streams have so far shrunk that they are seldom more than ankle-deep, whilst in the hot weather they frequently altogether cease to flow. After heavy rain, however, they are turned into turbid and rapid torrents, but even then would probably remain impassable only for a few hours at a time.

On the morning of September 23rd Wellesley advanced from Nalni, a small village built on both sides of the Purna river, some 6 miles south of Assaye. He had not expected to meet with the enemy that

day, and had arranged to effect a junction with Stevenson on the 24th, but he was misled by false information, and unexpectedly found himself in the presence of the enemy, from which it would appear that the use of cavalry for reconnoitring was imperfectly understood in those days.

The Mahratta army was drawn up between the Kaylna and Juah rivers, on ground whose highest point is some sixty feet above those streams, its left resting on Assaye, its right extending far towards the west. Alison thus describes the scene: "The sight was enough to appal the stoutest heart. Thirty thousand horses, in one magnificent mass, crowded the right; a dense array of infantry, powerfully supported by artillery, formed the centre and left; the gunners were beside their pieces, and a hundred pieces of cannon in front of the line stood ready to vomit forth death upon the assailants. Wellesley paused for a moment, impressed but not daunted by the sight; his whole force, as Stevenson had not come up, did not exceed 8,000 men, of whom 1,600 were cavalry; the effective native British were not above 1,500, and he had only seventeen pieces of cannon."

The opposing armies have been estimated as follows:—

Army of Scindiah.—Cavalry, 18,500; infantry, 11 battalions; matchlock men, 500; heavy ordnance, 35 guns; light ordnance, 170 guns.

Army of the Rajah of Berar.—Cavalry, 20,000; infantry, 6,000; artillery, 35 pieces; camel guns, 500; rocket men, 500.

It was indeed a case of the hour and the man. A less capable and determined commander might have retreated before such a numerically superior foe, and awaited the reinforcements that were only one march behind him. But such a course would probably have resulted in disaster. The army, surrounded and harassed by a swarm of Mahratta horsemen, would probably have been annihilated, as, in the following July, Colonel Monson's force was destroyed by Holkar on the Chambal river, when action as determined as that of Wellesley at Assaye might have resulted in victory instead of defeat.

But Wellesley, possessed of a mighty genius and a mind capacious of great events, perceived the enemy's weak point, and grasped the moral and physical advantage conferred by the initiative.

In front of the Mahratta position, the Kaylna river, with steep banks and swollen by the monsoon rains, ran deep and swift, forming an impassable barrier. But between the villages of Pipalgaon and Warur, now, and probably then, but squalid hamlets, each with its mud fort, there was a ford, and to this passage Wellesley directed his small force, and, having crossed the river, obliged the hostile army to effect a complete change of front, with their left on Assaye and their right on the Kaylna river. Their position thus became too limited in lateral extent for the numbers that occupied it, whilst the cavalry which formed the principal part of the Mahratta force was unable to act with full effect in such a confined space. This will easily be understood by reference to the map. The whole of this space between the two rivers

is now under cultivation, but there was probably more wasteland and bush jungle in the earlier part of the century.

I cannot do better than here quote Sherer's account :—

"The order of battle being thus skilfully changed, the infantry of Scindiah was compelled to present a new front. They did so with greater ease than was expected. The line they now formed reached with its right up to the Kaylna, and its left upon the village of Assaye on the Juah. The front now presented by the enemy was one vast battery, especially towards the left, so numerous and weighty were the guns, and so thickly were they disposed immediately near the village. The fire was rapid, furious, and terrible in execution; the British guns, few in number, opened as the line advanced, but were almost on the instant silenced. Their gunners dropped fast, and their cattle fell killed or lacerated beside them. With the fierceness of the struggle, and the fearfulness of the hazard, the undaunted spirit of the general rose. He at once abandoned the guns, and directed an advance with the bayonet; with the main body he soon forced and drove the enemy's right, possessing himself of their guns by a resolute charge."

During this period of the action the general had a horse killed under him, and his orderly dragoon was struck by a round shot close beside him. But the battle was not yet won. There was still a mass of cannon thundering from the midst of a multitude of troops that clustered around the village of Assaye, the ground in front of which was swept like a glacié by their fire.

The gallant 74th, fighting against tremendous odds, were hard put to it to hold their own. A cloud of Mahratta horsemen charged furiously into their ranks. Then Colonel Maxwell, the cavalry commander, at the head of the 19th, and well supported by the native horsemen, seeing that the moment for action had arrived, charged down upon the hostile ranks, and turned the almost accomplished defeat into a rout, but was himself unfortunately slain in the hour of victory. The enemy fought bravely, many of their gunners and infantry, who had feigned death, and so allowed the cavalry to pass them, joining in the battle. But the success gained by Maxwell's charge was well confirmed by the bayonets of the 78th, who had been kept in hand, and the Mahrattas were routed with dreadful slaughter.

The sun of Assaye rose upon a mighty host of 50,000 men, confident of victory. He set upon their scattered remnants flying from the field of battle. The victors had not sufficient force to pursue.

The enemy left 2,000 dead upon the field, and 98 guns were taken.

The loss on the British side was 428 killed, and 1,138 wounded.

Wellesley has been blamed for imprudence in attacking such a vastly superior force, yet the result showed that his judgment was correct, and history has since proved, on many occasions, the advantage conferred by the adoption of a bold initiative, especially in dealing with an Asiatic enemy. In this case, had Wellesley, instead of attacking, declined to accept the battle, and attempted to retreat and await

Stevenson's arrival, it is highly probable that his force would have been overwhelmed and cut to pieces by the myriad Mahratta horse. As it was, his bold decision and skilful tactics not merely saved his army probable disaster, but secured a glorious victory.

Assaye is now a small village containing some three hundred inhabitants. It has probably not altered much during the present century, except that it has thrived under a period of peace and prosperity. The majority of these Deccan villages never change, with the exception of those jungle hamlets which are here to-day, and gone to-morrow. But Deccan villages are interesting. Each has its mud fort—palpable sign of the turbulent times through which it has existed. These forts are now crumbling away into the dust—evidence of the security that has grown under the beneficent influence of British rule, which is, in some measure, extended to native states.

Some few of them still retain a trace of pristine greatness. The remains of large forts, built on solid foundations, are evident, occasionally with massive stone gateways of fine structure, but all fallen into ruins, generally crumbling away in the midst of a rank undergrowth of prickly cactus and clinging creepers, and containing a mere collection of squalid habitations, where three generations have now lived in peace.

Assaye is a type of such villages. It slumbers on the bank of the Juah river amid the mouldering ruins of its fort. No monuments mark the sepulchres of the forgotten dead, who were slain there ninety-five years ago. Nothing remains to commemorate the great battle that took place there, save the hammered iron and rough leaden bullets that are still picked up by the husbandmen when they are tilling their fields.

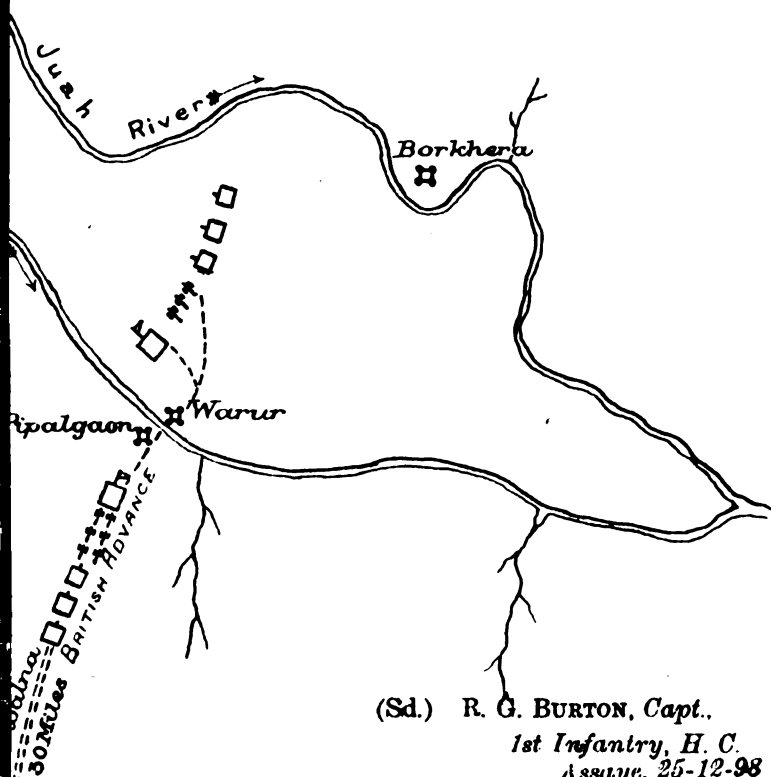
P L A N
OF THE
FIELD OF ASSAYE,

23rd September 1803.

ASSAYE

Scale 2 Inches = 1 Mile.

Yards 400 0 400 800 1200 1600 2000 Yds.



INSANITARY CANTONMENTS.

BY CAPTAIN H. F. THUILLIER, R.E.

The subject of this paper is not one that usually finds a place in the pages of this journal, and it compares unfavourably in point of interest with the accounts of modern and ancient campaigns and other warlike themes which generally adorn them. Still the preservation of the health of the soldier, in peace as well as in war, is so important a branch of army administration that no apology should be needed for discussing it in a military journal. Nor is it a subject that may be left to specialists. The duties and responsibilities of officers of all branches of the service are becoming day by day greater and more varied. They may be called upon at any moment for duties of the most diverse descriptions; they are required to know more than a little about accounts, to be able to run a grocery store; they are instructed as to the anatomy of a transport mule and should have a good eye for a camel; they have been employed in fighting famine and in suppressing plague. None of their duties, however, are more important than the care of the men under their charge, and a knowledge of how to keep them in health under the unfavourable conditions of bad climates and rough quarters is among the most useful qualifications they can possess. A battalion may be the smartest in the army, but, if when called upon for active service it is ineffective on account of sickness in its ranks, not only is it useless for the time being, but the legitimate aspirations of its officers and men are frustrated. A very considerable responsibility therefore rests on those in whom the charge of quarters and cantonments in peace time is invested.

In England it is true that the sanitary condition of barracks is not, to any great extent, the concern of the local military authorities; this is due partly to the fact that the administration of army affairs there is more centralized and partly to the different conditions that prevail; one result of which is that sanitary arrangements are more complicated, and thus enter more into the domain of the specialist. In India not only barracks and lines but all parts of every military cantonment are under the exclusive control of the local military authorities, who are thus directly responsible for their sanitary condition; moreover, the climatic and physical conditions are different, and the conservancy arrangements, being of a more primitive type, are dependent to a greater degree for their satisfactory working on the supervision of those who have charge of them. Station and district commanders, besides being generally responsible for the sanitation of the stations under their command, have also constantly to decide on matters which are directly or indirectly of a sanitary nature, such as applications for permission to build, granting of sites for building purposes, extensions

of bazaars, selection of sites for military buildings, etc., and sometimes also to report on important projects of sanitary improvement. The duties of cantonment magistrates in particular are most closely connected with this subject, as these officers are directly responsible for the condition of the bazaars, which often contain many thousands of inhabitants, and also for the conservancy of the station generally. It is evidently therefore most desirable that all officers who may one day occupy any of these positions should have a general knowledge of the causes that lead to defective sanitation and of the means by which it may be avoided.

Notwithstanding recent progress in hygienic knowledge, it does not appear that the sanitary condition of our Indian military cantonments has improved proportionately. Enteric fever has, if anything, increased of late years, and its ravages now cause a serious drain of the strength of the British army in India; cholera, though checked in most places by the introduction of good water-supplies, has by no means vanished and occasionally gives startlingly unpleasant proofs on its vitality; malarial fevers still claim many victims; and, finally, bubonic plague has made its appearance in more than one cantonment. All of these diseases are filth diseases and are directly traceable to filthy surroundings. They are preventible and their existence clearly points to defective sanitation. It is therefore worth while examining and endeavouring to ascertain in what way Indian cantonments fail in this respect, and, broadly, in what direction remedies may be looked for.

The elements of sanitation lie in the removal of all filth from inhabited localities and in measures to prevent its accumulation. Sir Douglas Galton, the eminent sanitary engineer, has enunciated a similar principle in saying that the requisites for effective sanitation may be embodied in the words "pure air, pure water, pure earth."

Impure air may occasionally arise from impurities in or on the ground, which come under the head of soil impurities, or it may arise from overcrowding and want of ventilation which in Europe is a fairly fertile cause of sickness. In India, however, the conditions are favourable in the latter respect, and considerable attention is paid by the military authorities to the question of ventilation. All barracks are designed so as to give ample air space per occupant; they are placed far apart and generally so arranged that the prevailing winds have full access to them. As regards the housing of European soldiers, therefore, it may be admitted that all that is necessary in the way of securing purity of air has been done.

The importance of pure water is too well known to need discussion. Water is rendered impure by impurities in the soil where the wells or springs are situated. It will be shewn later on that the soil of all inhabited localities in India becomes polluted in course of time, therefore water derived from wells, or in hill stations from springs, within the cantonments must after a time become polluted. This fact has been recognized, and in nearly all cantonments steps have been taken, or are being taken, to provide a pure supply conveyed in pipes from an uncontaminated source at a distance. In those cases where the catchment area is preserved from pollution and the water itself is

guarded from contamination during its conveyance to the consumer, the requirements of a pure water-supply may be said to be fulfilled; but this can only be said to be the case when the water is laid on directly in taps to every barrack and cook-house, so that it can be drawn directly by the consumer without the intervention of mussacks or other germ-breeding receptacles.

There is one way, however, in which many of the existent water-supplies in cantonments are incomplete, and that is, that they are insufficient in quantity. This may have arisen from the supply having been originally calculated at only the bare minimum necessary for domestic purposes, or from an unforeseen increase in the population, or from a partial drying up after a time of the water-bearing beds whence the supply is derived. However it may be caused, an insufficiency of water undoubtedly exists in very many cantonments, and in these cases water for gardens, road-watering, plunge-baths, etc., has to be obtained from old wells or springs within the cantonment area. Every one of these old wells or springs is a source of danger, as it is impossible to make sure that it will not be used for drinking or cooking purposes, and cases have occurred where disease has been traced to the use of water from places of this sort. A perfect water-supply, therefore, should be amply sufficient for every purpose, and all other sources of supply, such as wells or springs, should be summarily closed. All cantonments where old wells, etc., exist and are in use for any purpose must be held to be insanitary.

The last of the three essentials,—namely, purity of soil is as important as either of the others, and is perhaps the least attended to. It embraces the effective and immediate removal of all excreta, filth, rubbish, decaying vegetation, slops, surplus water, and rain water in such a manner that none of these dangerous substances may remain in or on the soil in the vicinity of inhabited places. Decaying organic matter in the soil gives rise to poisonous gases therein. Decaying vegetation, especially if accompanied by moisture and a certain degree of heat, gives rise to what is known as malaria; also moisture alone in the soil even unaccompanied by malaria may be a source of danger to health. Every description of soil contains within itself a greater or less amount of air or gas which is capable of movement within the soil. Everyone will remember to what a distance in England the smell from a broken underground gas main will extend in the soil even when the latter is frozen hard. It is therefore evident that other dangerous, though odourless, gases are equally capable of lateral and upward movement in the soil. Sudden changes of temperature will cause such movements: a rise in the level of the sub-soil water will force air and gases out of the soil: a heated building will suck them up into its rooms. These gases when rendered impure by organic matters in the soil or when saturated with moisture are injurious to health. The evil effects of malarious and damp soils on the human system are too well-known to need discussion; those arising from poisonous gases evolved by decaying organic matter are no less deadly. Whether the immediate cause of all or any zymotic diseases is the breathing of foul gases, or whether it is the introduction into the system of certain

microbes or germs, is a question on which different opinions are held by different persons, but which is not material to the present argument, as it is known that such microbes do not breed and multiply except in the poisonous emanations from decaying organic matter. The latter therefore, if not the proximate cause, may justly be called the prime cause of these diseases.

It is feared that in all cantonments too many generating causes of impurity exist. In the absence of sewer drains, excreta and slops are disposed of by burying under what is known as the shallow trench system. Even if it could be admitted that this system were in itself innocuous, still it is open to the objection that it makes no provision for the removal of refuse water from baths and lavatories which is generally allowed to run out on to the ground, and it is certain that much of the kitchen refuse in married quarters and in private houses is thrown out on to the ground also. Dry water-courses and hollows and irregularities in the ground become only too often deposits for litter and rubbish; thickly populated bazaars and native settlements foul the soil beneath them, as also do ill-ventilated and insanitary privies. The poisonous gases generated in the soil by these causes are attracted by ordinary natural laws to the neighbouring houses or barracks where they tend to poison the inhabitants. In cold weather a heated house, with the door and window openings shut, will suck in air, perhaps poisonous or damp, from the soil through the floor. Where the floors are of impervious material, it will find its way through cracks holes, or faulty joints, or even up the walls if they be of porous material such as brick; in the case of boarded floors, as are usual in the hills, the gases would have direct and unchecked access. In the hot weather all buildings radiate at night the heat they have received during the day; they thus become foci for soil emanations which would enter not only through the floors, but from the surrounding ground through doors and windows. Sleepers in the upper flats of double-storeyed buildings would escape them.

In addition to noxious gases caused by organic matter, another source of danger is the presence of water in the sub-soil. Malaria is generated when a soil contains decaying vegetable matter, moisture, and a temperature of about 68° Fahr. Swampy or low-lying places therefore generate malaria in the hot weather, and this is drawn into habitations in the manner indicated above. In the winter in the plains or in the rainy season in the hills malaria is not generated owing to the absence of heat, but damp air may be drawn into houses and give rise to chest and tubercular diseases among those who breathe it. In most of the stations in Northern India the extreme dryness of the climate during the summer months precludes danger from malaria; it is during and after the monsoon that the disease causes are most active. The process that takes place at this time is probably as follows: the sudden and heavy downpour of rain is unable to drain away at once and sinks into the soil; the immediate result is a rise in the sub-soil water level which causes the expulsion of the air and gases contained in the soil. These gases are noxious owing to the previous polluted condition of the soil. Th

continuous downpour of rain goes on raising the sub-soil water level till at length the ground is water-logged, and, as in all cantonments the soil is a mass of impurity and filth, the water turns this practically into sewage, and the result is that the cantonment becomes sewage-logged. At each temporary cessation of rain poisonous gases are generated; these hang about the place and pass into buildings, and at the next downpour a fresh expulsion of gases takes place. Most people will have noticed just after the first few days of the rains the many and horrible odours that are prevalent. It is generally thought that these proceed from foul matters on the surface of the ground, which, after lying dormant during the hot dry months, have been stirred up by the rain. These odours proceed, however, not from this cause but from the foul sub-soil air which has been suddenly expelled by the rise in sub-soil water level. Besides the organic impurities, nearly every soil contains vegetable matter in some form or other; when the rains cease, the vegetable matter decays, and we then have the three conditions for generating malaria, *viz.*, moisture, decaying vegetable matter, and heat. From the causes explained above are derived all that crop of zymotic diseases which prevail in the plains during and after the monsoon.

It may perhaps be thought that the picture given above of the polluted state of the soil in cantonments is overdrawn, but it is not so. Bath-water and the slops from washing dishes have been thrown out on to the ground on the same spot daily perhaps for fifty years. Some people think that the heat of the sun dries this up and renders it harmless, but it is not the case; it sinks into the soil and makes it impure. The water from soldiers' lavatories is never conveyed away in pipes; as a rule, it is merely run out on to the ground, and in some places it may be carried away in an open masonry channel to an adjacent nullah, or merely for a few hundred yards away from the building; in either case it adds to the pollution of the soil. Irregularities in the ground, dry nullahs, and out-of-the-way corners very often become deposits for litter and refuse. Crowded bazaars pollute the ground they occupy, while the insanitary habits of the lower classes of natives in general are too well-known to need comment. The ordinary privy, even the well supervised ones for British troops, are fertile causes of impurity; the necessity for removing the excreta by hand and transferring it to receptacles is bound to result in a certain amount of spillage; this soaks into the earthen floor of the latrine and sweeper's passage. The top few inches of earth in these are occasionally renewed in a more or less perfunctory manner, but the pollution penetrates far below the renewed part, particularly in the rains. As to native privies, no one can doubt that they still more rapidly pollute the soil beneath them.

The whole system of disposal of excreta as practised in Indian cantonments must be regarded as insanitary. Owing to the difficulty and expense which would attend the introduction of a water drainage system as employed in England, the ancient methods of hand-removal and burial have been retained to the present day. The shallow burial system now employed has been said to be the most adapted to

the conditions prevalent in India, and to be as sanitary and effective as any other. The only sense, however, in which it can be said to be adapted to Indian conditions is that it is carried out entirely by manual labour, which in India is easily procurable and cheap; but in order to be sanitary, the process requires to be carried out with the most scrupulous care and cleanliness, which in the nature of things it does not get. There are several sanitary objections to the system, such as the necessity for keeping the excreta in receptacles for many hours before it is disposed of, and carrying it long distances past barracks and dwelling-houses to the place of burial, but the principal objection is that the trenches themselves are often a source of offence and always pollute the soil. Notwithstanding that the method of burial in shallow trenches and subsequent growth of crops over them is supposed to be a speedy method of rendering the sewage innocuous, yet it is evident that the soil must get thoroughly polluted before the process has had time to act, as the liquid portion of the sewage at once sinks in and is unaffected by the sun's rays or by the subsequent cultivation. In wet weather this is particularly the case. If the trenches are really at a considerable distance from the residential portion of the cantonments, then perhaps the evil would have no great effect, but, owing to the necessity of keeping them within the cantonment boundaries and to the gradual extension of the building area, the trenches are generally too near inhabited buildings: moreover, the increase of population and the restricted area suitable for trenches has, in many cases, necessitated the same ground being again used too soon, that is, before it has had time to recover from the effects of the last burial; hence the impurity and offensiveness become greatly increased.

It will be seen from the above that every cantonment in India is having its sub-soil polluted more and more every year; and that as the poisonous gases generated by this pollution are capable of lateral movement in the soil and upward movement out of it, these become, particularly during and after the monsoon, a source of danger to health. It is hardly too much to say that all or nearly all the enteric fever prevalent in cantonments is traceable directly or indirectly to this cause, and the fact that enteric is on the increase rather than the reverse is accounted for by the fact that the soil pollution increases every year. No other theory accounts for the fact that enteric is more prevalent now than it was twenty or thirty years ago or for the fact that it continues its ravages after new and pure water supply installations have been made. It may be argued in contradiction to this theory that many cases of enteric have been distinctly traced to the victim having partaken of impure food or drink purchased in the bazaar, and that analysis of bazaar cakes and mineral waters has disclosed the presence of the enteric microbe in them, and that in consequence the disease is caused by the consumption of impure food and has no connection with the soil. The connection, however, though not at first sight apparent, does exist, since it is the filthy condition of the soil in bazaars that breeds the microbes that get into the cakes and drinks.

It would appear, therefore, that the direction in which a remedy may be found for the insanitary condition of Indian cantonments lies in measures for the prevention of pollution of the soil. The first and most important measure would no doubt be the introduction of an improved system of sewage disposal. With this object experiments have already been instituted in several cantonments with a view to the destruction of excreta by incineration, but considerable difficulties have been met with, particularly in regard to the disposal of the liquid portion. A thoroughly efficacious, innocuous, and at the same time economical incinerator has yet to be invented. The latest ideas in England on the subject of sewage disposal are in the direction of biological processes which consist, practically speaking, in the cultivation of bacteria which rapidly reduce the sewage into harmless elements. Many English towns are now introducing systems of this sort, but the experiments made up to date are even yet insufficient to permit of any rules as to what would be the most suitable method in any particular case. In India of course data are entirely wanting, and it is uncertain how far the different climatic conditions would affect the question. In a pamphlet, published a few months ago, Mr. A. E. Silk, M.I.C.E., Sanitary Engineer, Bengal, gives a short description of many of the experiments lately carried on in England. Mr. Silk is of opinion that what is known as the septic tank system would be the most suitable for India, as the work is done in closed air-tight tanks and is free from all offensive emanations. The tanks could therefore be erected among barracks or in crowded bazaars without causing the least nuisance. He draws a pleasing picture of the Indian bazaar of the future with its public latrines, each situated on top of its own septic tank, the liquid products of which would be profitably disposed of as manure, while the gases given off would be utilized in lighting the neighbouring streets! Though he admits that this picture is somewhat utopian, he makes out a very good case for the desirability of experiment in this direction.

Equally important as the question of disposal of sewage is that of how to preserve from pollution the soil of cantonments and bazaars. Drainage is obviously the first necessity. It will be seen from what has been already shewn of the action of sub-soil water in generating malaria and noxious gases and in diffusing them into the air that it is of the utmost importance to reduce the subsoil water level. This can be effected by means of what are known as sub-soil drains which are used extensively in England for the drainage of agricultural land and of building sites. In places where the geological formation renders it impossible to permanently reduce the level, then steps should be taken to keep it at a constant level, that is to say, to provide means for the immediate escape of the surplus water which is poured into the ground during the monsoon. This will prevent the generation of malaria; it will also prevent the putrefaction of the filth in the ground which arises when the latter becomes water-logged, and, what is more important still, it will cause to be washed away through the sub-soil drains the filth which has accumulated in the soil during the dry weather. This one step alone, namely, the provision of sub-soil drains,

will at once make an enormous difference in the sanitary condition of a station. Even in the hills all buildings situated on a hillside should be protected by sub-soil drains to prevent access to them of moisture from the hill above. The wide and flat areas over which Indian cantonments are scattered would make sub-soil drainage projects extremely expensive, and it is presumably owing to the disinclination of Government to face this expense that the question has not been taken up, though its desirability has been officially brought to notice several times ; the first Army Sanitary Commission so long ago as 1863 strongly recommended it for all Indian cantonments, and a Blue Book, published in 1882, again gives it among the measures necessary to improve their sanitary condition. The objection of expense gave rise to great opposition to sub-soil drainage in England when first it was introduced, but now it is universal. Moreover, the drain on the strength of the British Force in India caused by enteric fever is in itself such a source of expense, besides being an evil in other ways, that it is worth a great expenditure to get rid of it.

In addition to sub-soil drainage, surface drainage on an organized system is most necessary in order to carry off rain water and prevent it sinking into the ground. Open kutchas are not sufficient, as they rapidly silt up or become overgrown with weeds and grass ; good masonry or cement ones are necessary. Where an abundant water-supply has been introduced, it is absolutely necessary that drainage should be provided for the surplus water which otherwise stagnates and sinks into and pollutes the soil. Unfortunately this is seldom done, and much unhealthiness can be traced to this. As an extreme instance, Bombay points a salutary warning of the result of neglect in this particular. The system of throwing dirty water and slops on to the ground is eminently insanitary, and it would be very desirable to carry it off in pipes or drains, or to have it always removed by hand.

Next to drainage, paving is a most potent factor in the sanitary improvement of towns. Covering the surface of the ground so as to prevent its contact with the air, prevents water and filth from penetrating ; it also renders impossible the generation of malaria or of noxious gases and prevents the passage into habitations or into the air in towns of any noxious gases which are already in the soil, or which may be generated elsewhere. It is beyond question that London owes its low death-rate largely to the fact that practically the whole of its surface is covered either by buildings or by roads and streets. Some portions in fact of the east and south are built on what were low-lying marshes, but these parts compare favourably in healthiness with other parts that lie higher. In Rome this is even more marked : notwithstanding the prevalence there of a severe type of malarial fever, the low-lying thickly populated quarters of the town, such as the Ghetto, are more free from it than the hills around the city where the surface is less completely covered. Wholesale paving of this sort is of course impossible in Indian cantonments ; much good, however, would be effected by paving or metalling for a certain distance round each barrack ; grassing, too, is a good substitute for paving, and has the further advantages of being a relief to the eyes and of sensibly reducing the temperature. It is

above all necessary to provide thoroughly impermeable and damp-proof layers below the floors of all buildings, and it would be an advantage to make the floors of all privies impervious, washing out and disinfectants being adopted to keep them clean. Floors of barracks and dwelling-houses should be raised two or three feet above the ground, and free access allowed for air between the floor and the ground; though this is laid down in the military regulations as a prime requirement for all barracks, yet it is often lost sight of, while in private houses it is hardly ever attended to. Paving of bazaars and native quarters would be a most beneficial measure and is perfectly practicable; all roads, courtyards, gullies, alleys, and slums could and should be well paved with a smooth impermeable material and well drained. This alone would be of enormous benefit in checking malaria and other preventible diseases; but if by any possibility the owners of houses in bazaars could be made to abandon the highly insanitary earthen floors invariably used and to substitute concrete or brick, the effect would be astonishing. It has already been shown how malarious and other poisonous vapours penetrate from the soil into heated houses through the floors; it is not therefore surprising that malarial fever carries off more natives than all other diseases put together when it is remembered that they sleep, as a rule, with their noses a few inches above a dirty earthen floor. The floors themselves, moreover, harbour filth which putrefies and gives rise to noxious exhalations. The connection between plague and earthen floors has been brought to light in Bombay, and one of the first measures of disinfection is to dig up and burn the earth of which the floors are composed. In the middle ages all houses in England had similar earthen floors, and it is most interesting in this connection to note an extract, quoted by Sir Douglas Gulton in "*Army Sanitation*," from a letter by Erasmus in the reign of Henry VII on the subject of an outbreak of the sweating sickness. We read therein that "the floors are in general laid with white clay and are covered with rushes, but so imperfectly that the bottom layer is left undisturbed sometimes for twenty years, harbouring expectorations, vomiting, the leakings of dogs and men, all droppings, scraps of fish and other abominations not fit to be mentioned. When the weather changes, a vapour is exhaled from the floors which is very detrimental to health." The result of this was that in 1516 the sweating sickness carried off 12,000 persons in ten or twelve days, the only preventive was moving into fresh air and separating households. It is hard to believe that the extract given above is not a reference to an Indian city in the present day. In cantonment bazaars it would not be impossible to gradually insist on all house-owners flooring the ground floors of their houses with brick or concrete, and a proviso to the same effect could be introduced into all grants of cantonment land for building purposes. There is no doubt that much preventible sickness is caused, even among British troops, by the overcrowded and insanitary condition of the bazaars having led to extensive soil pollution. The effect of this would be neutralized by the measures advocated above, namely, pucca flooring of houses, paving or metalling of all roads, courtyards, and gullies and adequate drainage; to this should be added an ample supply of water for flushing and cleansing

purposes. Indian bazaars would then cease to be the pestilential spots they are now, and the foods and drinks vended therein would be free from taint.

All the measures suggested above require the expenditure of a considerable amount of money, and it may be said that, unless the necessary funds are provided by the Government of India, the local authorities cannot carry out the measures. A great deal, however, can be done to improve the sanitary condition of cantonments without special funds. In the first place improvements to bazaars come out of cantonment funds and not from Imperial sources, and the cantonment funds are administered by the local military authorities; secondly, every officer, who is responsible for the sanitation of cantonments or lines, can insist on scrupulous cleanliness by preventing the depositing of litter or rubbish in obscure corners; by arranging for the drainage of low-lying ground, ponds, etc., and for the removal of all refuse water instead of letting it be thrown out on to the ground; by cutting all jungle and brushwood which conceals filth and prevents free access of air; and by filling up and levelling all irregularities in the ground, and so preventing their becoming dumping places for muck.

In the present day all zymotic diseases are attributed to microbes, and there is somewhat of a tendency to neglect the sanitary laws of the last generation in favour of investigations into the customs and habitat of these interesting creatures. Such investigations are doubtless valuable from a scientific point of view; but it is probably sufficient for the practical, though unscientific, sanitarian to remember that microbes only flourish in filth, and that therefore the way to attack the causes of disease is *to remove all filth*. Filth as already stated includes not only excreta, litter, rubbish, etc., but also all waste water, even clean water and rain water; and by removal is meant not dumping of it into out-of-the-way holes and corners, but its entire transfer beyond the pale of habitations and its disposal there in such a manner that it can never after become a source of offence to any human being.

ON MARCHING.

BY MAJOR B. M. SKINNER, R.A.M.C.

The utility of infantry in the field depends largely on their marching powers, on which account the proper training of soldiers in this respect becomes a matter of extreme importance, and the following remarks are made as appearing to the writer as bearing on the subject, and consequently as possibly of some practical use.

The marching power of a unit may be defined as not only the power of arriving at a certain point after a day's march, but the power of arriving there in such a condition that it is fit for further and prolonged exertion which may be required to be sustained for some days. Consequently the utility of a unit depends not on its power only of doing so many miles an hour during a march between two points, but on its potential energy on the completion of such a march. Practically applied, this means that the unit should have been trained to march in such a way that on the completion of a march it may have a reserve-fund of energy well in hand ; the larger the reserve, the better the unit for war purposes. In order to obtain this reserve, the unit must have been trained in marching, and must have studied all the points bearing on marching, in order to make use of those points which will conserve energy, and in order to get rid of, or minimise the effects of, those factors which reduce energy.

As the power of mobility is as necessary to the efficiency of a body of infantry as the power to use the rifle, the training in marching during peace time should be carried out as assiduously as rifle practice ; units should be marched out at least three times a week, even in hot weather, and at a pace which will be something quicker than that they will adopt when on field service. If this leads to men falling out—well, such men are well rid of at the time ; and further, such men should be put through a special course of training to enable them to pull along without falling out on other occasions. One of the prime factors leading to success in performance is the wish to do a thing—keenness ; every effort should be made to produce this attribute. The system of putting off marching or field days because the weather is warm, "on medical grounds," is one which cannot but conduce to the enervation of the soldier. His profession is one of marching, and of marching at times in the greatest heat, and his training should lead up to that ; he should not expect to be put to bed when the weather is warm. At the same time let him have all necessary medical assistance during his training ; those who break down should be taken care of as a matter of course, but on recovery their training should be resumed as before. By this means, during peace, a body of men is put into condition for the hardships of war, and instead of field service resulting in the disintegration of units through inability of the soldier to stand the work, as is the

case at present, it will be found that the loss through fatigue will be reduced to a minimum. Overfatigue, causing inability to sleep, loss of appetite, reduces the soldier, and renders him an easy prey to disease.

During peace-time marches, when in cantonments, units do well to train themselves up to their maximum of speed—a speed which may sometimes be required on service to attain some special object; but generally on field service the pace should be below the maximum; the greater the pace, the greater the proportionate exhaustion. What is then required is an easy pace, so that the soldier may arrive at his destination with a reserve-fund of energy to enable him to settle his camp, and, if necessary, to fight a battle with greater credit to himself than he would do if played out by excessive previous efforts. Probably 3 miles an hour, including halts, would be a good rate of marching, it being understood that this is intended as the pace of the rear of the column. Troops in cantonments should be trained to march at least 4 miles an hour if they are to be in training for taking the field in an athletic condition. Troops not in an athletic condition had much better stay at home, as they are a burden to themselves, and an encumbrance in the field; they obstruct the column of which they may form a part; they are useless for fatigues; they fill the hospitals, and cumber the line of communications by passing backwards when sick, and forwards again on discharge from the base.

Taking it for granted that on starting on the march the soldier is a healthy man, the points to be considered as bearing on his capability of carrying the march out successfully are: his boots, the fit of his clothing, his accoutrements, his food, and his drink.

The boots supplied to soldiers are of excellent material, and if *properly fitted*, leave nothing to be desired. It is understood that no officer would think of allowing his men to march in brand new boots; they should, however, be in good condition, and should have been worn sufficiently to have adapted themselves to the feet of the individual. Peshawar nails driven into the soles and heels make the boots more durable, and for hill-work enable the wearer to get a firmer footing on the rocks. The question of chaplis, with leather socks, may be disregarded for British troops, as having no points of advantage over the army boot as far as the soldier is concerned, being less durable, having no heels, and also entailing an issue of an unaccustomed article. Thick socks should be worn, and on completion of the day's work should be removed and dried. Highland shoes appear not to be so durable as the army boots, and are liable to admit fine gravel which works up beneath the spats.

When, during a march, a blister has been raised, it should be treated at once, and there is no better treatment than the old German method of running a thread of silk through the blister and leaving it in, tying the ends so as to form a small loose loop. A carbolised ointment spread thickly on the sock exactly over the injured spot forms the best dressing.

The khaki jacket should be built loose about the chest, and especially so about the collar; and the trousers should also be fairly

loose so as to allow of free movement about the knee, and also when stooping. The putties should be carefully and evenly wound, and securely tied, to obviate the discomfort of frequent re-adjustment. Other kinds of dress need not be considered here, as likely to cause controversy.

The soldier's accoutrements are probably as good as can be obtained for the purposes required ; it may be suggested, however, that hooks on the waist of the khaki jacket would probably be found to help to support the belt, and to distribute the weight, especially when the soldier is carrying his 100 rounds.

The question of head-dress is one that is always to the front in India. The present helmet is disliked by all practical soldiers as being an unserviceable article. A cover after the model of the Cawnpore Tent Club hat has been suggested, but would be found to be too cumbersome, delicate in structure, and liable to spoil in wet weather ; when lying down to shoot, it gets in the way. Perhaps a hat which is softer round the temples may be found in other respects adaptable to this climate, such as the Jameson hat worn in sub-tropical regions in South Africa.

Regular hours for feeding should be maintained as far as possible in war as in peace. When reconnaissances or other movements are carried out which are likely to be prolonged over the hours of a regular meal, a cold ration at least should be carried in the haversack. There are no points of merit, nor is there any advantage in testing endurance in allowing soldiers to carry out a move, and perhaps return from an action, with empty stomachs. During night marches, when away from the front, the coffee-shop should always be at hand at "half-road," with a supply of biscuits and hot tea ; and when in the vicinity of an enemy, the biscuit should be at hand in the haversack, and cold tea in the water-bottle, for consumption at some arranged period during the march. If the night march is commenced, say, after 3 A.M., the "gunfire" tea should be consumed before starting, with a biscuit, when nothing more will be required until the breakfast hour.

The question of drinking when marching is one that requires some training among the uneducated or unaccustomed. No sportsman, or pedestrian accustomed to his work, will dream of constantly carrying his water-bottle to his lips. He will walk for hours without a drink, and when he takes a drink, he will halt to do so, take sufficient to quench his thirst, and wait a short time till he is rested, during which rest much of the liquid will be absorbed, before again proceeding. Most soldiers, after 3 or 4 miles of a march, have commenced and sometimes even emptied their water-bottles ; they re-fill at the first opportunity, and from the nearest source, whether bhisti's massak or road-side puddle ; and by the time half the march is over, their stomachs are filled with water, the distension oppresses the breathing and the heart's action, and one by one they fall out feeling "done up." So much is this the case that the writer has come to look upon the water-bottle as used by most soldiers as a serious impediment ; and believes that if the private could be trained to keep his supply of water or cold tea till he reached "half-road," his marching powers would be much enhanced.

That this can be done is shown by the fact that the colonel commanding a British infantry regiment has trained his men to march without drinking except at stated times. Besides the ill-effects mentioned above of constantly drinking, is the resultant evil of obtaining water from sources along the road which are likely to contain not only specific poisons, but also living organisms of a coarser type. In order to keep off thirst, or what is frequently mistaken as such, namely, a dry tongue, the mouth should be kept shut, the breathing being carried out entirely through the nose, for which purpose the latter organ is supplied; thus dust is kept from the tongue and throat, and the air which by causing evaporation dries the tongue and throat, while it does not dry the nose, is excluded. An empty pipe held between the teeth will assist in the desired effect. Smoking, even for habitual smokers, is better not indulged in except at halts; in moderation it will moisten the mouth by causing the saliva to flow. Probably the best drink to carry in the water-bottle is cold weak tea.

SOME FOREIGN ARTICLES OF SPECIAL INTEREST.

(Contributed by the Intelligence Branch.)

HORSE ARTILLERY IN THE CAVALRY FIGHT.

FROM THE "MILITÄR WOCHENBLATT" No. 3 OF 1899.

After cavalry manœuvres on a large scale, ideas and proposals concerning the action of horse artillery in the cavalry combat regularly crop up, and it is therefore evident that the opinions hitherto held are diverging in all directions.

In the summary of the great manœuvres, held in France in 1894, it is stated, as follows, by Löbell: "The result is that out of five great cavalry attacks, one only appears to have been prepared by artillery; and that, on the other hand, on three days the artillery rather hindered than helped."

The days are indeed not yet long gone by, when the cavalry leader looked on artillery as a most unpleasant hindrance which he could not dispense with in actual battle, but which at manœuvres he wished at the devil.

From these manœuvre experiences the necessity for drawing up some settled plan for the employment of artillery has now become quite evident; and, as we see, differences of opinion exist as to whether artillery should be used on the threatened or secured wing, or whether it could not be placed on both flanks; and behind which line it should preferably take up its position beforehand.

It may be regarded as likely that lively discussions will yet ensue on such matters for it must be borne in mind that innovations are being made in all drill practices at a time when the new drill regulations have been in force for years, and the fundamental principles therein laid down must have gradually become instilled into the army.

This is indeed the case, and the real reason is because, as formerly, cavalry leaders have not arrived at a proper method of handling their artillery.

Manœuvres ought to be the image of war, and the greatest endeavours are naturally made to make them correspond as far as possible to actuality.

Nevertheless there is one point which in particular stands as an obstacle in the way, and which, if not sufficiently kept in view, must lead to a most unnatural state of things, and that is, "time."

The different phases in manœuvres are enacted in general much too quickly ; and although in this connection various rules, which have proved themselves sound, have been laid down for the infantry combat, still it is a very hard matter for the cavalry leader to sieze the auspicious moment, for he must always act on a kind of prescience, if he wants at manœuvres to be on the spot at the right time.

With a cavalry division the difference between war and manœuvre conditions is felt in a much more marked degree. In this case the representation of war becomes misrepresented to such an extent, that at manœuvres the artillery only enters into the fight at a time when, in actual warfare, its action would be at an end, *vis.*, on the delivery of the attack.

In the cavalry fight at manœuvres it generally happens that the catching sight of the enemy and the order to attack are simultaneous. The troops ride from the very outset with the determination to attack, and have only in view the one consideration of securing as favourable a field of attack as possible. The strength of the enemy in front is known accurately enough, and advantage is rightly sought in making the most of the auspicious moment.

In actual warfare the determination to attack could not be arrived at quite so quickly. There will seldom be accurate information beforehand of the number of the opposing squadrons, and the responsibility for making a dash at random, while matters are still uncertain, will weightily influence the rapidity of a decision. As a proof of this, it is not at all necessary to go back to the 1870 campaign ; a well-led practice attack is sufficient to confirm the full truth.

The way in which the artillery of a cavalry division is to be employed in campaign will, after the first attacks, very soon become manifest ; but these lessons may cost us much too dear, and it is therefore quite to the point to make up one's mind concerning its employment in time of peace, for on this is founded its use in war.

With so large a body as a cavalry division, a period of at least ten minutes will elapse from the moment of getting sight of the reported enemy, until the attack is set in motion ; generally there will be a longer pause, because in most cases the commander will not regard an instantaneous attack as indicated, but will rather consider that a fuller elucidation of the state of affairs is to be thought of, or a favourable moment to be awaited.

It is at this time that the action of the artillery comes in ; the cavalry commander, who has ridden on ahead, must accordingly first take steps to fix the spot on which the guns are to take position ; then only does he order the deployment of the division.

Hence it follows that in the column of march the artillery must be placed at the head of the main body, that squadron alone preceding it, which is assigned for it's special protection.

This squadron goes forward at the same time as the guns, and by means of numerous patrols provides for security both to the front and flanks. The duty of the squadron is in general not so much to oppose the enemy, but rather to give timely information of his approach, for,

if the artillery is not surprised by the enemy getting into its near vicinity, it can always of itself keep the latter at a proper distance.

According to the regulations, a special protective body of troops in the cavalry fight is assigned to artillery only "in case of necessity."

The leader therefore has a free hand in the matter, and he can act according to the actual circumstances of the case. But the phases of the fight vary very rapidly, and the case can easily be imagined when the special protection for the guns has come to be forgotten.

It is, however, a decided advantage to the cavalry leader to have the question settled once for all of securing the safety of the guns by the allotting to them of a special protective body. For this purpose one squadron will, in most cases, suffice. Such an allotment but slightly weakens the force at disposal, and the advantage is obtained of the free employment of the reserves regardless of other considerations.

The artillery is secured from unpleasant surprises both in its advance as well as in its fire position, and is not obliged to employ its own personnel in scouting to the flanks and rear. Both arms would accordingly benefit if the allotment of a special protective body were made by rule.

The fire of the artillery will cause many of the enemy's arrangements to become disclosed, thus offering the leader some grounds on which to frame his dispositions; for this reason alone it will continually be necessary in warfare to put the artillery into action first of all, for its fire makes clear the conditions of the enemy and renders it possible to come to right conclusions. In any case it is too late to put the guns in action only when the attack is determined on and the orders for that purpose have been given. The main action of the artillery, and their only possible effective use in general, is during the time which precedes the attack; hence it follows that in the cases, when an instantaneous attack is to be delivered, the artillery must not in conjunction with it be drawn to the front, but must be taken off to the flank.

The co-operation of the artillery in the attack itself will be possible only in isolated favourable cases, and therefore it is desirable not to take these in general into consideration.

As soon as the artillery has to cease fire, *i.e.*, when the attack comes to be carried out and the reserves can no longer be fired on, it will, in most cases, be necessary for it to limber up, so that on the pursuit of the enemy it may be in its place in good time, or may be able to move off into a position in rear as quickly as possible.

In the exceptional cases, when the artillery position is not directly exposed to the attack of the hostile cavalry, it will form an excellent receptive position for its own retiring cavalry, and in this instance will of course remain in position.

Cavalry will consequently be able only on the rarest occasions to reckon on the support of artillery in the actual attack, and the former must therefore limit itself to getting the value out of its artillery before and after the attack.

It is also necessary that this "before the attack" should be brought into prominence in the rules and regulations in a manner corresponding to the importance of the matter. The present rule is as follows: "The leader of the independent cavalry decides whether he will employ the artillery or not."

This really quite self-evident rule, placed at the beginning as the first sentence, paves the way to procrastination in the employment of the artillery. For the cavalry leader it must, however, be laid down as a matter of course that he must first of all point out the position for the artillery.

By so doing the question as to the wing on which the artillery should be employed at once falls through, because before the attack is ordered, before even in general any decision is arrived at regarding an attack, the artillery has to take up its position. Who at the present time thinks of raising any question as to on which flank of the infantry attack the artillery should be employed; these questions have fallen through ever since the powerful factor possessed in the preparing fire of artillery became recognised, and the same holds good in the case of the cavalry.

Exceptions, as for example, if the cavalry desire to come up un-awares, will naturally justify other modes of action.

The remaining "rules of combat" for horse artillery can always be framed in merely general terms, for in this connection any hard-and-fast rules are less than ever indicated.

Improvements in modern fire-effect are, however, bringing more and more into the foreground the one fundamental principle, *vis.*, that the first measure to be taken on catching sight of the enemy is "artillery to the front."

This holds good for the cavalry division in the same degree as elsewhere.

FROM THE "HEERES-ZEITUNG," 1ST OCTOBER 1898.

A portable electric field-railway.—How important, under certain circumstances, a field-railway can be in war was learnt by us in the Franco-German War of 1870-71. Its value lies chiefly in an increase of rapidity over that of the comparatively feeble ordinary military transport in carrying backwards and forwards the supplies of the army. Field-railways, moreover, acquire great significance in countries that have been drained of supplies, or that are poorly cultivated,—in those with few communications, and in those that are wanting in good transport animals. Further, field-railways appear very suitable to prolong permanent railways, or to use until the latter are ready for working, or to take the place of those that have been destroyed. Their employment is also recommended for the transport of the great amount of dead weight that is required for the attack and defence of fortresses.

The firm of Arthur Koppel of Berlin has lately produced an extremely practicable electric field-railway. The real importance of this patented invention lies in the attachment of the traction-rails to the motor-rail in a portable whole—the so-called rail-frame—whose V-shaped supports are fastened to the traction-rails. On straight sections the rail-frames should be 25 m. apart, but on curves of small radius each traction-rail should be a frame-rail, so that the motor-rail may lie in the centre of the curve; elsewhere the ordinary form of traction-rail, 65 to 75 m. m. in height, is used, and the existing stock can therefore be made use of.

The electric current is generated in the usual manner by a stationary engine, in which a dynamo is driven by machinery (steam-power, turbine, gasometer, etc.). To convey the current of motive power, two cables lead from the dynamo, capable of being drawn in or out by a lever. The so-called "feeding-cables" have safety splices in them to prevent damage to the dynamo in case of overloading on the railway. Both the "feeding-cables" are carried to the railway line, being either fastened to solid natural objects or erected on poles. The poles can, according to the character of the line, either be rammed tight into the earth or be portable supports; the latter, when the line is straight, simply stand on the ground on a firm base, and at a bend in the line have sharpened ends and are secured against side-strain by braces anchored in the ground. A similar pole is erected at the rail-head, where one feeding-cable passes on to the motor-rail of the frame, whilst the other is connected with the two traction-rails.

For laying the motor-rail a construction-truck is used, capable of being made fast to the rails and provided with tools, a drum of copper wire, and a wire-stretching apparatus. The loose end of the wire is passed over a roller at the end of the truck and fastened to the pole at the rail-head. When the motor-rail is to be laid, the construction truck is pushed beyond the first rail-frame and secured to the rails, and, with the help of a jack or other stretching tool, the copper wire, which has

been wound off the drum, is made taut and fastened to the "rail-frame." The strain on the wire is maintained by another construction-truck, which is also provided with stretching tools and can be anchored, so that the first truck, being freed, can be pushed beyond the next "rail-frame," where the proceedings as described above are repeated.

The light weight of the "rail-frame" and the absence of the work, which the ramming in of the masts necessitated in the old system, cause such a reduction in the cost of laying a line that the Koppel Electric Field-railway seems remarkably well suited for universal adoption.

On permanent lines the motor-rail terminates in a picket anchored in the ground, whereas on temporary sections the construction-truck remains anchored at what is for the time being the end of the railway, so as to be able to unwind more cable, if the line is to be extended, or to wind up what is already in use, if the line is to be removed.

The motor-car is of simple construction. The motor-engine is usually set up on it and induces the revolution of the driving wheel by the action of a cog-wheel and two chain cables. The under-carriage is on springs, and has spring buffers and couplings.

The rate of speed can be regulated by a lever-handle, which is placed beside a reliable brake on the front platform. The electric motor is particularly well-adapted for negotiating steep ascents and drawing heavy loads, as it is better able than any other mechanical or animal draught-power to develop an increase of its normal strength for short distances.

Prize Essay Gold Medallists.

- 1872.....ROBERTS, Lieut.-Col. F. S., V.C., R.A.
 1873.....COLQUHOUN, Capt. J. A. S., R.A.
 1874.....COLQUHOUN, Capt. J. A. S., R.A.
 1879ST. JOHN, Maj. O. B. C., R.E.
 1880.....BARROW, Lieut. E. G., S.C.
 1882.....MASON, Lieut. A. H., R.E.
 1883.....COLLEN, Maj. E. H. H., S.C.
 1884.....BARROW, Capt. E. G., S.C.
 1887.....YATE, Lieut. A. C., S.C.
 1888.....MAUDE, Capt. F. N., R.E.
 YOUNG, Maj. G. F., S.C. (specially awarded a silver medal).
 1889.....DUFF, Capt. B., S.C.
 1890.....MAGUIRE, Capt. C. M., S.C.
 1891.....CARDEW, Lieut. F. G., S.C.
 1893.....BULLOCK, Maj. G. M., Devon. Regt.
 1894.....CARTER, Capt. F. C., Northumberland Fusiliers.
 1895.....NEVILLE, Lieut.-Col. J. P. C., S.C.
 1896.....BINGLEY, Capt. A. H., S.C.
 1897.....NAPIER, Capt. G. S. F., 2nd Bn. Oxfordshire Light Infantry.
 1898.....MULLALY, Major H., R.E.
 CLAY, Capt. C. H., S.C. (specially awarded a silver medal).

MacGregor Memorial Silver Medallists.

- 1889.....BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).
 1890.....YOUNGHUSBAND, Capt. F. E., K. Dn. Gds.
 1891.....SAWYER, Maj. H. A., S.C.
 1891.....RAMZAN KHAN, Havildar, 3rd Sikhs.
 1892.....VAUGHAN, Capt. H. B., S.C.
 1892.....JAGGAT SINGH, Havildar, 19th P. I.
 1893BOWER, Capt. H., S.C. (specially awarded a gold medal).
 1893.....FAZALDAD KHAN, Dafadar, 17th B. C.
 1894.....O'SULLIVAN, Maj. G. H. W., R.E.
 1894.....MULL SINGH, Sowar, 6th B. C.
 1895.....DAVIES, Capt., Oxfordshire Light Infy.
 1895.....GUNGA DYAL SINGH, Havildar, 2nd B. I.
 1896.....COCKERILL, Lieut. G. K., 28th P. I.
 1896.....GHULAM NABI, Private, Q. O. Corps of Guides.
 1897.....SWAYNE, Capt. E. J. E., 16th B. I.
 1897.....SHAHZAD MIR, Dafadar, 11th B. L.
 1898.....WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.
 1898.....ADAM KHAM, Havildar. Guides Infantry.

The following Essays have been received for the Gold Medal Competition for 1899 :—

1. Dans le metier de la guerre le jeu est toujours à celui qui fait le moins de fautes.
2. L'audace, encore l'audace, et toujours, l'audace.
3. Miching Mallecho.
4. Nec aspera terrent.
5. Si vis pacem, para bellum.
6. Ready, Aye, Ready.
7. C'est à cette situation qu'il s'agit de porter remède—Pierron.
8. Virtute nihil obstat et armis.
9. " Each valley, each sequestered glen
Mustered its little horde of men.

* • * *

On right, on left, above, below.
Sprung up at once the lurking foe."

Sir Walter Scott.

10. Tam Marte quam Minerva.
11. Rule Britannia.

The Journal

OF THE

United Service Institution of India.

VOL. XXVIII.

JULY 1899.

No. 136.

THE TACTICAL PRINCIPLES AND DETAILS BEST SUITED
TO WARFARE ON THE FRONTIERS OF INDIA.

BY COLONEL J. P. C. NEVILLE,
ASSISTANT QUARTER MASTER GENERAL, MADRAS COMMAND.

Motto :—MICHING MALLECHO.

(*Oph.* What means this, my lord ?

Ham. Marry, this is miching mallecho ; it means mischief).

The frontier of two-thirds of India being the sea, and a consideration of the best means of conducting warfare thereon being more a naval than a military problem, it is proposed in this paper to deal solely with the land limits of our Indian borders—that is to say—our northern and north-western frontiers.

The theatre of war in these directions is now so well known to Indian military students as to need but little description.

High, barren, inhospitable, and precipitous mountains, for the most part destitute of any woods or verdure, enclosing in their fastnesses green valleys, watered by the torrential streams descending from the main water-sheds, or, elsewhere, barren valleys of stones and boulders covered with low scrub and thorn jungle ; these are the prominent features. The valleys are much broken by ravines which hamper the movements of cavalry and wheeled artillery. Roads, properly speaking, there are none. The inhabitants have no need of roads : a mere goat-track on the mountain side is to them sufficient as a means of communication between valley and valley, village and village. The main routes run for the most part in the bed of some mountain torrent, dominated on both sides by towering cliffs or a succession of spurs ;

C

they usually cross the ranges separating the different valleys at a saddle, or *Kotal*. These Kotals are for the tribes favorite defensive positions.

The inhabitants of these valleys are fierce and warlike tribes or clans, of the Mahomedan faith. They are constantly at war with each other, but occasionally sink their differences, at the call of some zealous fanatical priest, to join in common issue against their natural (as they believe) enemy—the white-faced “Kaffirs” of Hindustan.

It will be at once evident that, in such a country and under such conditions, the methods and manœuvres most suitable for warfare upon the historical battle fields of Europe will be useless and impracticable.

Our drill books, though admirable for the instruction of troops fighting on the plains of India, require several entirely new chapters dealing with the conduct of the three arms in mountain war.

Take, for example, the time-honoured first principle of the necessity for deploying your force on a broad front as soon as the enemy is sighted. If the only approach to the enemy's position is a mule-track on which troops can only advance in double file, this first principle will require modification to suit the new conditions of the case; and so on, with others.

But fortunately, owing to the lessons taught us by the late campaigns on our North-West Frontier, we are now in a position to formulate the new principles and details requisite for such a contest, and already orders have been issued for the annual exercise of our troops, wherever practicable, in the elementary training so necessary to keep them always ready for employment against these redoubtable enemies at our gates.

The general subject of Indian frontier warfare, to be exhaustively treated, should be considered from three points of view, *vis.*—

- (a) War with the Frontier Tribes. (Such as the late punitive expeditions.)
- (b) War with an Invading Army, the frontier tribes being friendly; and
- (c) War with an Invading Army, the frontier tribes being hostile.

The last of these conditions involves questions more of policy and strategy than of tactics proper, for which reason but a very brief mention will be made of it.

WAR WITH THE FRONTIER TRIBES.

General Tactical Principles.

It will be well at the commencement to set forth the advantages over our troops which in some ways these tribesmen undoubtedly possess, and the difficulties in such warfare that we have to overcome.—

Intimate knowledge of the ground in the theatre of war.

- (i) To begin with, the enemy possess the immense advantage of being inhabitants of the theatre of war.

They are intimately acquainted with the country, every by-path, ravine, and defensive position of which is familiar to them from childhood, so that they can find their way by night almost as easily as by day. They are thus enabled to lay ambuscades for our convoys, reconnoitring patrols, picquets, or any small detached parties, and surprises of this sort are amongst their most common tactics.

- (ii) Being mountaineers, they have the advantage of a continual athletic training. Their agility in scaling and descending the most precipitous mountains is wonderful to behold, and they can cover the most broken ground in a way that the best of our troops cannot approach.

- (iii) In these mountain regions the "Vendetta," or blood-feud, is a proficiency in skirmishing, and an immemorial institution. The consequence is that there is scarcely a family of any importance which is not involved in one or more of these hereditary quarrels which extend to the third and fourth generation. From this fact, and the incessant inter-tribal petty wars which prevail, it results that every man goes abroad with his life in his hand. Armed with jezail or rifle, sword, and knife, he sees an enemy in every bush, behind every rock, lurking in each ravine. Continually alert to the danger which ever dogs his footsteps, he naturally becomes an expert skirmisher.

Taking advantage of every possible scrap of cover, even when engaged in the most peaceful avocations, he never exposes himself when concealment is possible. His very existence, moreover, depending as it does on the accuracy of his aim, he spends his spare time in improving his marksmanship; the result is that there are no better skirmishers and but few better shots than these frontier tribesmen. With improved weapons, their skill in shooting has improved, and the experience of the late campaigns has taught us that to-day at medium, and even long ranges, they can compare not unfavourably with our best troops.

- (iv) Another point in favour of the enemy is their lightness of equipment. Those whose homes are in the immediate neighbourhood carry but their arms and a few rounds of ammunition which they carefully husband, having no reserves from which to replenish their pouches. Those who come from afar carry in addition a blanket which, wound round their waists by day, is but little impediment, and forms their covering at night.

- (v) Not the least in the list of the enemy's advantages is the prevalence among them of the spirit of religious frenzy, or *ghazi-ism*. These *ghazis*, who not only hold death in contempt, but even eagerly court it, under the obsession of

their religious superstition, are usually chosen as leaders, and their desperate heroism renders them the most formidable of foes.

These are the men who lead the night-attacks against our camps, and who hurl themselves undismayed on our bayonets in the hope of future reward in the material heaven of the Mahomedan.

Superiority in numbers.

(vi) Lastly, in most cases, the enemy will have the superiority of numbers.

Alongside these advantages to the enemy must be set—first, the disadvantages under which we labour when fighting them; and, secondly, the superiority which we possess over them in certain ways—

(a) We are fighting in an unknown country, and although certainly Fighting in an unknown country. of late our maps have been greatly improved, yet many details are still wanting, so that constant reconnaissances are needful, and the difficulties of preconcerted strategical movements are multiplied.

(b) Being dependent for food and shelter on what we can carry with us, our baggage train is of necessity very great, and as the transport animals, owing to the absence of roads, have usually to move in single file, the ground it covers on the march is excessive, and it is exposed through all its length to attack by daring parties of the enemy; moreover, the necessity for getting the train safely into camp before dark prevents us from making any but the shortest marches daily.

(c) As the baggage must move on the roads (such as they are) and must be protected during the march, as must also the main body of the force, we are obliged to detach numerous bodies for the protection of our flanks, thereby causing much extra fatigue to our troops.

(d) As water is only to be found, as a rule, in valleys and low-lying ground, we are obliged to pitch our camps in such localities which are the worst suited for defence, and this gives the enemy a chance for night "sniping" into camp from the neighbouring hills, which is harassing and spoils the rest of the troops. To safeguard against these night-attacks, numerous strong picquets have to be thrown out to considerable distances, thereby greatly increasing the night duties.

- (e) Our troops, not being in the same constant training as the enemy, are slower in movement, and are much more easily fatigued.
- Inferiority in physique.

Up to this point, all these things have been against us. Let us now see wherein we possess the superiority.

First of all, we have *discipline* whereby the many move and are controlled by the will of one. The enemy lack this greatest of military qualities. They are uncontrolled and uncontrollable. Each man endeavours individually to inflict as much damage as possible on the common foe, but he is his own commander ; he takes orders from no man.

Then we possess cavalry and artillery, both of which arms have great moral effect, and neither of them have they.

We have, moreover, the best of modern weapons and ammunition and (or we *ought* to have, but it must be confessed that in this respect we are sadly deficient) the latest scientific inventions—such as captive balloons for reconnoitring, electric lights for camp defence, the field telegraph, heliograph, and many other such things, all of which give the possessors a great moral advantage.

We have also the *prestige* of former victories.

It will be evident, therefore, that—speaking in general terms—the physical advantages are theirs, and the moral ours.

This brings us to the first general principle, which is—

1. *We should develop to the utmost our moral advantages in a warfare with an ignorant and superstitious enemy.*—At the close of the Cabul Campaign of 1879-80, the Afghans came into our camps in a friendly way, and freely discussed the events of the war. They acknowledged themselves beaten, but declared that their defeat was accomplished by the *heliograph*, which they evidently looked on as a magical instrument. In a contest with an ignorant and superstitious people, it is ever the same story—it is the unknown—the incomprehensible, that paralyses their powers of resistance.

It is very needful, therefore, if we would neutralise the advantages, already mentioned, which they possess, that we should freely make use of every new scientific invention calculated to be of use to us and to astonish them. The principal of these, which are now urgently required, are undoubtedly captive balloons and electric search-lights.

We should, moreover, provide our forces with the greatest proportion of mountain artillery and cavalry that can be utilized with advantage. We have seen in the late campaigns the moral effect of artillery fire in breaking down the enemy's defence, and the excellent effect of machine guns, both physical and moral, at Chakdara.

Cavalry too has a terrifying effect on mountaineers ; and although the opportunities for the use of this arm may be infrequent, yet it is well to have some squadrons always at hand whenever an opportunity occurs.

The second broad general principle to be adopted is that—

2. *Forgetting our previous notions of warfare, based on the teaching of our drill-books, we must adapt our tactics to the enemy's methods of fighting, and the nature of the country in the theatre of war.*—The tribes on our borders do not fight by the book. Their methods are *guerilla* in nature.
2. Our tactics to be adapted to the enemy's methods, etc.

Before a determined advance they melt away ; during a retreat they crowd on our rear-guards ; at night they infest the outskirts of our camps, " sniping " at the tents and baggage animals.

At all times they seem to surround our force, lying in wait to cut off stragglers, overpower detached parties and rob the baggage trains. We must, therefore, adapt our tactics to meet these conditions. This will be treated on under " Details—Tactics."

Occasionally they make a stand, as at Dargai, and then they are easiest dealt with. This brings us to the third principle.

3. *In attacking a position, the front attack should be supplemented by a movement on one or both flanks directed against the enemy's flank, and threatening his line of retreat.* Experience has taught us that the tribesmen are always badly flustered by a flank attack, and begin to retire as soon as their line of retreat is threatened.
3. Direct attacks to be supplemented by attacks in flank, and the enemy's retreat threatened.

4. *In this description of warfare, individual fire is preferable to volley firing.*
4. Individual fire preferable to volleys.

This point will be dealt with under " Details—Tactics."

5. *In every regiment of infantry a proportion of men should be specially trained for scouting duties.*—In all reconnoitring work, whether for the purpose of discovering the whereabouts and movements of the enemy, or for the purpose of examining the ground to be traversed by the troops, the fewer men employed the better ; but these few should be the best men for the purpose obtainable, and will need special training. The use of Gurkha scouts in the late Tirah Campaign was found to be most advantageous. But it would be better still if every regiment had its own trained scouts, as it would then in all situations be independent.
5. The training of scouts.

These men, who should be selected for their *physique* and intelligence, should be specially instructed in reconnoitring duties, and a proportion in the elements of field sketching. They should be constantly exercised in hill climbing and other athletic exercises. For this purpose arrangements might be made to send them annually to the nearest hill depôt. It would cost money, but it would be money well spent.

Some inducement might be necessary to attract the best men, and this might take the form of extra batta while actually engaged on field service, a small grant of extra pay in peace to cover wear and tear of

uniform and boots, and some honourable distinctive badge to be worn on the uniform.

Scouts should be as lightly equipped as possible, and their great-coats, etc., carried for them under regimental arrangements.

6. *In operations beyond our frontier, medium sized independent brigades are preferable to larger bodies of troops.*—We have learnt by experience

6. Medium brigades better than large bodies of troops. that, owing to the absence of roads, the necessity for flank protection, the undue extension of the baggage train, and the urgency of reaching camp before dark, a brigade can seldom cover more than some 8 miles in the day, and it is evident that, if an attempt is made to move a larger body of troops over the same road, the difficulties are greatly enhanced.

When a large force takes the field, it is better, if possible, for independent brigades to march on parallel or converging routes, care being taken to keep up constant lateral communication by signalling. Should this course be found impracticable, brigades should follow one another at intervals of not less than twenty-four hours.

7. *For the better control of the baggage train the muleteers and drivers should be brought more definitely under military control.*—This

7. Control of muleteers and drivers. matter, which is of the utmost importance, will be treated of under "Details—Transport."

8. *For the security of camps at night a sufficiency of picquets must be posted to check the "sniping" of the enemy.*—After a hard day's work, it

8. Security of repose for camps by night. is most essential that the troops should have adequate repose. Without this they will very soon break down and be useless for fighting purposes. Owing to the improved nature of the enemy's weapons, the night picquets must be thrown out to much greater distances than heretofore, and must be strengthened, so as to be self-supporting and capable of resisting all night attacks until relieved at daybreak.

9. *After any naturally strong position has been captured, it should, if possible, be held; but if it is found necessary to withdraw the victorious troops* (for want of water, or other

9. The abandonment of a captured position. reasons), *it is advisable to do so to the front (i.e., the direction in which the enemy has retreated).*

The reason for this is that to the ignorant tribesman any retrograde movement is an indication of weakness and fear.

He knows nothing of the "*reculer pour mieux sauter*" principle. If then we withdraw towards our base, the enemy are tempted, as at Dargai, to re-occupy the position in increased strength, and the consequence is a new fight for the same ground, causing losses that might have been avoidable.

Of course this is not always possible, but when possible, it is very advisable.

10. *During a march, if the rear-guard is engaged, care must be taken that the column does not march away from it.**—The natural anxiety of

10. Commanders to be careful not to march away from their rear-guards.

the commander to get his troops into camp in good time has on more than

one occasion caused this important principle to be lost sight of, with the result that rear-guards have been left behind unsupported and have had to remain out all night, causing much unnecessary loss and hardship to the troops engaged.

11. *In rear-guard actions, to ensure the best results, the onus of protection should be divided amongst the troops.*—Rear-guard actions are the

11. In rear-guard actions, to ensure the best results, the onus of protection should be divided amongst the troops.

most difficult and demoralizing of all phases of fighting, and the conditions pre-

vailing on our frontiers render such combats more than usually trying to the troops engaged. The ferociously cruel atrocities, practised by the enemy on our wounded, makes it imperative to carry away all our casualties. As it takes four men (two carriers and two to carry arms) for each casualty, the fighting line is quickly depleted, and the supports expended in filling gaps. The rear-guard therefore becomes from moment to moment less equal to its allotted task, which greatly increases the difficulties of the commander, and acts unfavourably on the spirit and *morale* of the troops.

Moreover, it has ever been in these rear-guard actions that our heaviest losses have occurred.

For all these reasons it is very advisable that the strain on the rearward unit should be relaxed in the earliest reasonable time.

The men will fight all the better and more cheerfully if they have the expectation of being relieved within a given period—say an hour—and the strength of the rear-guard being doubled at the point of relief, the enemy will sustain a sensible check and, it is to be hoped, considerable losses.

For details of the scheme, see further on under “Details—Defence—Rear-guard Actions.”

12. *During a march in the enemy's country, the safety of the baggage and ammunition train should*

12. Importance of guarding the baggage and ammunition.

be the first consideration of the commander.—This is very important. The

ablest generals are the most careful for the comfort of their troops, knowing how much on this their fighting qualities depend. Every casualty in the baggage militates against this *desideratum*, and the importance of preventing ammunition from falling into the enemy's hands is so obvious as to need no comment. Yet, in the face of these facts, there seem to be many who hold that it is more important to reduce to a minimum the number of flank guards and to keep the bulk of the fighting force on the road. This is the old leaven of the drill-book. Should opposition be encountered during a march in a hill country,

* If the scheme of the next general principle be adopted, this No. 10 may be expunged as it will be no longer needed.

the road is perhaps the very worst place where the main body could be posted, for, as we have seen, the roads run generally in the bed of a water-course, through some ravine, and are dominated by heights on both flanks. For fighting purposes, therefore, the troops would be far better placed on the heights than on the road. This matter will be further discussed under "Details."

Another point to be considered is the moral effect on the enemy of the capture of any of our baggage and the cutting up of a few *drabis*. They are apt to magnify such petty successes in their boasting until, in their tribal traditions, they become important victories. It should be our care to prevent this.

The foregoing twelve general tactical principles do not, of course, comprise the whole sum and substance of frontier warfare. It has been found convenient to place them first, as being of broader and more general application than those which follow, and to include the rest under the next head.

DETAILS.

1. *Reconnaissance.*

Owing to the enemy's methods, already briefly sketched, all major reconnaissances must be in force, otherwise we run the risk of having our scouts cut off and massacred.

This does not, however, affect the rule that the fewer men in the actual line of observation the better. It is to selected officers that the commander will look for the requisite information. These officers, who should not be distinguishable by their dress, will move in the advanced line of scouts. This line should be supported at a distance varying with the nature of the ground (but not more than 400 yards in the most open country) by companies or half-companies in skirmishing order upon whom they can fall back if attacked. These troops will again be supported in rear by larger units, which should endeavour to keep concealed from view. Further to the rear must follow a reserve sufficiently strong to disengage the advanced units and secure the return of the whole in safety.

The force should be as lightly equipped as possible and have no transport animals of any sort.

A reconnaissance being for purposes of observation, and not for fighting, the place of the artillery will be with the reserve.

The cavalry in a hilly country will be chiefly employed in conveying orders, but in addition they will be found most useful in exploring side valleys which may be opened out during the advance.

The following are some of the chief points with which commanders should concern themselves:—

Officer Commanding Reconnaissance—

Should clearly understand what the General Officer Commanding requires to be done, and should make his plans accordingly. He should assemble his officers and explain to them clearly the nature of the duty to be performed by the column.

The general tactical principles to be borne in mind are—

- (a) No fighting that can be avoided.
- (b) No delay.
- (c) The capture, if possible, of prisoners.

It should be impressed on all commanders that the less firing that takes place the better.

If fighting is forced on him, the Officer Commanding must make the best dispositions he can to disengage and retire his force.

Once set in motion, the reconnaissance should push forward as speedily as possible, so as to reach its objective point and get back before dark.

Every endeavour should be made to capture prisoners, and it must be remembered that more information is often to be obtained from women and children than from fighting men. As the tribesmen, however, before going on the war-path, generally send their families to some distant place of safety, such captures are not to be expected.

The normal position of the commander is at the head of the reserve.
Officer Commanding Royal Artillery—

Should carefully reconnoitre suitable positions for his guns if obliged to cover the retreat of the force.

To aid in this duty he should have a small party of selected non-commissioned officers and men from the cavalry placed under his orders. He should also ascertain, as far as possible, the ranges of prominent objects to the front from such positions. He should be careful to retire his guns in good time, to prevent being cut off, as his most effective positions will usually be some distance off the route.

N.B.—An infantry escort should always accompany the artillery.
Officer Commanding Cavalry—

Should dispose his force most suitably to the nature of the country. Where the road runs through a ravine, a small advanced-guard should move level with the line of scouts to bring back messages: connecting files will follow, and the main body be kept well back. If a valley has to be searched to a flank, he should first inspect the approaches himself, and then tell off the searching patrols as may be necessary. If a valley is opened out ahead, the cavalry will move rapidly to the front and form a reconnoitring screen. Connecting files should be maintained between the line of observation and the head of the reserve.

Officer Commanding Line of Observation—

Will be the senior officer detailed for observation, and may perhaps belong to the Intelligence Branch of the Quarter-Master-General's Department. He will explain the objective point to his subordinates and control the direction of the advance.

He should tell off his scouts in pairs or groups of three, who must be careful to keep well extended. He will instruct the scouts to move as rapidly as possible over dead ground (*i.e.*, hollows from which nothing useful can be seen) and to pause and carefully observe from all crests and commanding positions.

He and the officers under him will note in their pocket-books all information acquired, all of which on his return he should compile into a general report for the General Officer Commanding.

One officer at least should be told off to make a sketch of the ground covered: he should have a couple of orderlies to assist him.

It is desirable that a signalling party should accompany the line of observation. It should be divided into three groups, one with the Officer Commanding in the centre, and one on either flank. In this way orders can be passed quickly and silently.

The signal parties should be a little in rear of the line and should not use the flag on crest lines or in positions from which they are likely to attract the attention of the enemy.

Minor Reconnaissance—

Owing to the extremely difficult nature of the country, all advances and retirements should be preceded by a few ground scouts who should carefully look out for the easiest and best ground for the movement. For this duty active and intelligent men should be selected; they will not, however, require any special training.

2. *Marches.*

The general principles of marches in the plains hold good for these mountain regions also, but with certain modifications, owing to the undue extension of the column of march, the difficult nature of the country, and the enemy's methods of fighting.

To begin with, the pace will be slow. Owing to the difficulties of the road, and the frequent necessity for closing up the column, the advanced-guard must make constant halts, and these halts, it must be remembered, should not, as in a flat country, be regulated by time but by suitability of situation.

The utmost, therefore, that can be fairly expected on a good (for the country) road is 2 miles, and on a bad road, 1 mile an hour.

It will be evident, therefore, that marches must be short, and that they should commence as soon as it is sufficiently light to see distinctly. All the troops and baggage should therefore be formed up *before* daybreak, so as to be ready to move off without the least delay. The divisions of the column will be as in the plains, *i.e.*—Advanced-guard, Main Body, Baggage and Baggage Guard, Rear-guard.

The advanced-guard should be sufficiently strong to be able to hold its own if suddenly attacked at any point of the road, and besides to supply flanking parties, if the commander decide that these shall be supplied by the advanced-guard. As a rule, however, the opposition to be expected by advanced-guards will be slight. Small parties of the enemy will fire on them as they advance, and these must be dislodged. When they have determined to make a stand and fight it out, their plans and movements are generally known to our Political Officers beforehand through our spies.

A proportion of cavalry should accompany the advanced-guard. When the ground allows of it, they should be pushed to the front ;

when the situation is unfavourable for their action, they should follow the advanced formed body of infantry, ready to resume their position in front immediately opportunity offers.

Troopers will be useful to the Officer Commanding Advanced-guard in sending back messages.

As a rule, artillery will not be required with advanced-guards, but it is important that they should be accompanied by a party of sappers or pioneers for the purpose of improving bad places in the road which might be a source of danger to the baggage.

Flankers.—Owing to the unavoidable extension of the column, the principal care of the commander will be the protection of his flanks, especially (as we have seen under "General Principles") those of the baggage and ammunition train.

The troops can look after themselves, however attacked; the transport drivers cannot; they are singularly helpless, and much inclined to panic, and it is imperative, for reasons already given, that their march should be completely protected. The baggage guard alone will be insufficient for complete protection, the danger not being of attacks in force, but most frequently of daring raids by small ambuscades.

Where the road lies along the summit of a ridge, all will be usually safe, as the enemy seldom venture to attack at a disadvantage up hill. But where, as it far more often happens, the route lies through a ravine dominated on both sides by heights, presenting under-features of alternate spurs and nullahs, it will be a different matter.

Here the enemy will have every opportunity for ambuscades, and these must be guarded against by flanking bodies of troops. As ground will seldom be found over which such flanking parties can move so as to keep pace with the column, however slow its progress, the best course to adopt is to send out from the advanced-guard picquets, whose strength will depend upon circumstances, which remain stationary, guarding the flanks until the whole column has passed, and then join the main body of the rear-guard, which, in this way, is being continually re-inforced as the march proceeds. The number and strength of these flank picquets will depend on the length of the column and the amount of opposition to be apprehended.

In all cases, *even if the whole fighting force has to be utilised* (i.e., the "main body") the march of the baggage train should be made as secure as possible.

As the advanced-guard will not always be equal to the strain of providing flankers in a very difficult country, it will often happen that detached bodies of troops must be utilized on the flanks.

The camp-colour men will usually march in rear of the advanced-guard.

The telling-off of advanced-guards is as for a plain, but the advanced party will move by groups, extended, and not in line.

On arrival at the camping-ground the Officer Commanding Advanced-guard will immediately throw out day picquets. Where the

situation of the camp admits of it, cavalry may be used for this duty, but if attacked, they should be replaced by infantry.

These picquets should remain out until relieved by the regular night picquets.

The Main Body.—The artillery, preceded by its escort, should move at the head of the main body, which should have a proportion of cavalry attached for conveyance of orders.

Each battalion should be immediately followed by its first reserve of ammunition, stretchers, and water-supply on ponies or mules; also its medical mule-trunks.

The normal place of the commander is at the head of the main body.

The Baggage Guard.—Baggage guards should be normally disposed, *i.e.*, advanced and rear guards, with one or more strong parties in the centre, and a few connecting groups of not less than a section. The advanced party should follow the main body, well closed up.

It should have a party of cavalry attached for the transmission of messages, as should also the rear-guard of the column.

The usual disposition of the baggage train is as follows :—

The 2nd reserve of ammunition.

The field hospitals.

The staff baggage.

The baggage of units in their order of march.

The commissariat.

The engineer park.

All baggage guards should move with fixed bayonets and magazines loaded, ready to meet any sudden rush or surprise.

Details regarding the better control of drivers (General Principle No. 7) will be found under "Transport."

The Rear guard.—In frontier warfare the command of the rear-guard is ever the post of honour, and as such is eagerly sought after.

The commanders, however, of rear-guards should be carefully selected—not so much for their bravery, which happily is a very general qualification amongst our officers, as for their experience, aptness for command, readiness of resource, shrewdness, and common-sense.

Experience, of course, will not always be forthcoming, but the other qualities will.

The Officer Commanding must ever be mindful of the responsibilities of his post. He should regulate his pace, as far as possible, to that of the baggage. The retirement will be carried out by successive bodies or lines passing through one another and taking up fresh positions in rear. A junior officer should be detailed to take command of the flank picquets joining the rear-guard until such time as one of their own officers arrives to relieve him. This officer should see that

the picquets retire in time to prevent being cut off. For further details, see "Rear-guard Actions."

Halts.—Halts should be frequent to allow of closing up. They should take place after a steep ascent or a very bad bit of road has been passed, and should be of sufficient duration to allow some rest to the rear as well as the head of the column.

Halts should be avoided in ravines or confined situations where the troops could be taken at a disadvantage by the enemy.

Staff duties.—An officer of the Quarter-Master-General's Department should accompany the advanced-guard.

His duties will be to select the best site for the camp, and allot their respective positions to the various units. He will select the best positions available for water-supply to men and animals, taking care that the latter is down-stream, and post a guard over the former. He will point out their various sites to the non-commissioned officers of the camp-colour parties, showing them the exact direction of their front. This officer should be supplied with a group of mounted orderlies.

On approaching the site of the camp, an officer of the Adjutant-General's Department or other selected Staff Officer should push on with a cavalry escort to select the best positions for the night picquets.* This is the more necessary, as the amount of day-light remaining will be limited.

3. *Encampments.*

To find a suitable camping-ground for a brigade of all arms in a mountain region is a matter of difficulty. The best must be made of the locality, such as it is, where the halt is decided upon.

The principal consideration is security.

The ideal camp would be situated on a plateau, uncommanded by any surrounding heights, which, with the minimum of time and labour, could be converted into a strong redoubt.

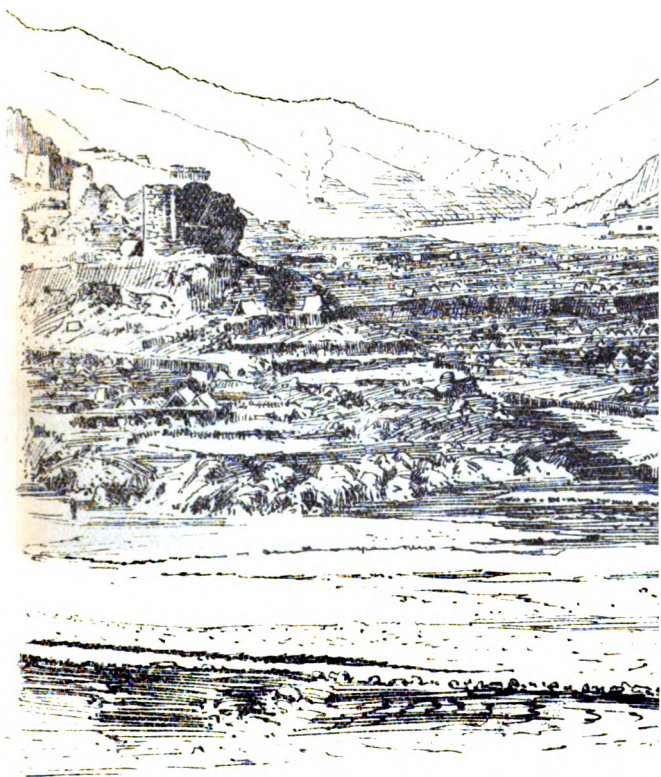
Such ground will be seldom found : the selection will be governed by considerations of water, grass, firewood, etc., and, as before said, the best must be made of the locality.

In the accompanying illustrations, which are from photographs taken during the Tirah Campaign, some camps will be seen which indicate clearly the many disadvantages of the sites which it was found necessary to occupy.

On reaching the site chosen, the Brigadier will select the positions for the night picquets in consultation with the Staff Officer, just mentioned, who has preceded the column.

These picquets should be provided by the units opposite to whose front they are situated, as a rule, but this is nowise imperative : their position should be carefully noted while it is yet daylight, and some

* It would be a mistake to leave this duty to the Field Officer of the day, who, taken from a general duty roster, might not possess the necessary qualifications.





indicating points arranged, so that, in case of a night-attack, the troops shall not fire on their own picquets.

In like manner the picquets must be careful not to fire in the direction of the camp. He will then tell-off alarm posts, giving to each unit its section of defence. In-lying picquets will be detailed as may be requisite; and positions for unit latrines selected (by their respective Quartermasters).

The out-lying picquets should entrench themselves with a stone breast-work, or take advantage of houses that may be conveniently situated, by putting them in a state of defence. If brushwood is available, the posts may be further protected by *abatis*. In positions, where the camp is liable to annoyance from sharp-shooters, they should be pushed out to a considerable distance, as 800 or even 1,000 yards.

They will then be able to afford better protection than if close to camp, and if sufficiently strong, may be able to surprise some of the "snipers." This has been found to have the best effect in stopping this form of nocturnal annoyance.

As soon as their respective sections have been assigned them, Officers Commanding Units should make the best arrangements possible for their defence by building breast-works, digging shelter-pits, etc.

If the halt is to be prolonged over the night, these can be improved the following day.

Security.—The subject of security for camps in mountain warfare is one which more particularly applies to standing camps. The tribesmen seldom venture to attack in force unless they have first made themselves thoroughly acquainted with the geography and defences of the camp.

This they can seldom do in the case of a temporary camp of a brigade or division, but it is different with standing camps. Here in the disguise of peaceful vendors of provisions, commissariat *employés*, road-making coolies, etc., the enemy's spies freely penetrate our lines and make a careful note of the forces and their disposition, the defences and their weak points, as well as the places where ammunition is to be looted. Moreover, after a time of tranquillity, standing camps have been depleted of troops until the force left has been inadequate to their requirements for defence, and this gives the enemy an opportunity for a sudden outbreak, such as that on the Malakand in July 1897. The first general principle for the defence of such camps is—

That the outer line of defence should be proportionate to the strength of the garrison.

The greatest safe extent of the outer line should allow of one man per yard with a third of the garrison in reserve.

If the garrison is reduced, the line of defence should be at once curtailed so as to be suitable to the means of the remaining available force.

The scattering of units on detached hills should be avoided.

The position selected for defence should be one to every portion of which the reserve will have easy access, and roads should be constructed to facilitate this.

The magazine should be in a central position, so as to be guarded by the reserve in case of attack.

In this central magazine should be stored the reserve ammunition of units, and not in quarter-guards, where it is liable to capture, as at the Malakand when the enemy took the quarter-guard of the Madras Sappers, and looted 10,500 rounds, together with 19 mules.

Only such ammunition as the men can carry on them and which can be quickly distributed to companies should be kept in quarter-guards.

In these standing camps we have the best opportunity for developing to the greatest extent our moral advantages referred to under "General Principles."

They should be provided with all such modern inventions as are calculated to overawe an ignorant and superstitious people and to be of the greatest use to the garrison. Of such are captive balloons, electric search-lights, telephonic communications, machine guns, shell fougasses, and mountain artillery. The first of these has not been mentioned in connection with reconnaissance, although for such purposes its use would be of incalculable value, because of the great difficulties (in the present imperfect development of the machine) of transport and manipulation.

But in standing camps, with their military roads to the base of operations, there can be no reason, except the untenable one of expense, for not utilizing this invention.

A captive balloon with an ascension in calm weather of 3,000 feet would be of the greatest use when disturbances are to be expected, in shewing the movements of the enemy from a great distance, to say nothing of the moral effect on the tribesmen of this novelty, by which they could not fail to be impressed.

Besides observation, however, there is another use for such balloons.

By a recent invention,* they can be made luminous by the inclusion in them of electric lamps connected with a battery on the ground by a wire running through the rope. By means of an ordinary telegraph key, an operator below can switch on or off the light, and thus signalling by night can be carried on for hundreds of miles.

Electric search-lights in the principal salients of the defence should also be considered indispensable munitions for a standing camp. These should be placed on small turrets suitably armoured for the defence of the manipulator. The dynamos can be driven by portable oil engines at a very trifling expense.

Each section of the defence, moreover, should be in telephonic communication with a central post from which the commander can issue orders and where he can receive intelligence.

Machine guns are most useful for repelling night-attacks more so usually than artillery (though the use of the latter should by no means

* Patented by Mr. Eric Stuart Bruce of London.

be neglected). They should be placed so as to command the principal approaches.

Every standing camp should be protected by entanglements at a distance of from 50 to 80 yards from the breast-works. It would be well to improve such defences by a free use of the old-fashioned "shell-fougass."

Though old to us, these infernal machines would be new to the enemy, and a few explosions during a rush would render them duly cautious in repeating the attempt. There are in our Indian arsenals many thousands of old 6-inch and smaller iron shells which could be utilized for this purpose.

The charge should be moderate to prevent danger to the defenders from splinters. The shells are exploded by being trodden on.

With an accurate table of ranges, and the aid of the electric light, artillery can be used with great effect by night as well as by day, and its value thereby doubled, as at present it is but of little use at night.

Defences.—Unlike temporary camps, the defences should by no means be left to Officers Commanding Units, but should be carefully laid out by an experienced officer, in the nature of a field work, or line of works. Particular care should be given to the provision of flank defence for each face, and if carefully laid out, there should be no dead ground.

For defence against night-attacks the troops occupying the flanking defences should, if possible, be armed with magazine rifles, as nothing is more demoralizing to a rush than a rapid flanking fire.

Protection of horses and baggage animals.—If the camp is properly situated, it should be nowhere commanded, but should itself command the approaches.

In such conditions the protection of the cavalry horses and baggage animals is comparatively simple. A trench some 2 feet deep and 12 feet wide placed 6 feet in rear of an ordinary 4' 6" breast-work, where such work is on the crest of a slope, would give protection from fire directed against the breast-work. As cavalry are of no use by night as such, and as the horses are very liable to panic, their camp should be situated in a re-entering angle, where they will be less liable to attack. The baggage animals likewise should be placed in trenches similarly situated. But in positions where they must necessarily be exposed, they should be placed inside a *sareeba* made of bags of grain, sand-bags, or such material as may be available, which should be used to heighten the surrounding stone breast-work.

Detached posts.—Detached posts should be properly constructed.

If they are considered to be *necessary*, no expense should be spared to make them *safe*. The fate of Saragheri is still fresh in our memories, and that of the never-to-be-forgotten gallant twenty-one, who died the victims of its faulty construction.

Alarm posts.—In all encampments the men should be perfectly acquainted with their alarm posts, and should be paraded at their respective sections of the parapet as a practice, so that even on the

darkest night they may be able without confusion to fall into their proper places.

The defence of breast-works.—It cannot be too carefully impressed on the troops that the secret of success in the defence of breast-works by night or day is that *no man must move from his post without orders*. When the enemy makes a rush at a portion of the defensive works, the natural impulse is for the defenders to forsake the parapet and group themselves together for mutual defence.

This enables the assailants to get over the parapet with impunity, and once inside, confusion, and if at night, too often panic, ensues.

If, on the other hand, every man remains steady at his post (and it should be impressed on him that it is his duty to die there rather than move without orders), the enemy, receiving a check at the parapet, can easily be shot down at close quarters, or if they attempt to scale the wall, can be bayoneted. If the assailants are in overwhelming numbers, support to the threatened point must be given by the section reserve, and every section of the defence should have its own local reserve for this purpose.

4. *Tactics.*

We have seen in the 2nd General Principle that we must adapt our tactics to the methods of the enemy. In this necessity History but repeats itself, for in the last century when our troops, at war with the French in Canada, found themselves confronted with hordes of Red Indians in the service of the enemy, they were forced to do the same thing. The frontier tribes fight on *guerilla* principles. They fire from behind cover by single men or small groups, and thus present an extremely difficult mark to aim at, and it must be evident that any sort of close formation on our side must be avoided as affording them an excellent target.

The whole question then of the successful conduct of such warfare resolves itself into one of good and accurate individual shooting.

Volley-firing against such an enemy (except on rare occasions) is a useless waste of ammunition.

What is required is a skirmishing line—well extended—of *skilled marksmen*, accustomed to shoot at a quickly disappearing mark. The first general principle then of our new tactics I take to be—*that except for defence, or the assault of a position, only our best marksmen should be placed in the first line.*

The more carefully I examine the subject, the more am I convinced that in this principle lies the secret of future success in this description of fighting; and as these frontier regions will, in all human probability, be the theatre of the wars that are likely to occur in the future of the Indian Army, it would be wise to prepare our organisation accordingly.

I therefore strongly advocate the formation in every infantry battalion, British and Native, of two light companies, to be composed *entirely of marksmen.*

The first requirement of the soldier is good shooting, and any measure of reform calculated to improve the musketry proficiency of the army deserves the careful consideration of the military authorities.

Although of late there has been a marked improvement in musketry, yet I think much remains to be done. The rewards for good shooting are insufficient; the amount of ammunition allowed for practice is inadequate, and the *status* of the marksmen is not made enough of.

My proposal then amounts to this—collect the marksmen, now scattered through the regiment, and make them into two *compagnies d'élite*.

Let it be generally understood that these companies are the pick of the troops: give them in peace some handsome addition to their uniform; let them march at the head of the regiment, and in every way uphold their superior *status*. Let their officers likewise be carefully selected for their general smartness, zeal, and athletic training, and the competition for enrolment in them that would arise could not fail to enormously improve the shooting of the army. Being intended for service in the first line in mountain warfare, these companies should be as lightly equipped as possible; in fact, excepting havresack, they should carry nothing but their arms and ammunition, everything else being carried for them on regimental transport. The animals should be the pick of the transport, and every care should be taken that they are well up on the march, so that the fighting companies shall suffer no inconvenience from the lightness of their equipment.

Should this scheme not meet with the approval of the authorities, I would still strongly urge on Brigadiers the formation in each of their infantry battalions of *temporary* light companies while on service beyond the frontier, for the reason that marksmen alone are the fittest for employment in the first line.*

Have we at present sufficient marksmen to make up these companies?

From the latest Musketry Returns, 1897-98, it will be seen that in British Infantry Regiments, on war strength, the average number of marksmen is 176, so that, by the addition of 24 first class shots, two companies of 100 men could be formed.

In the Native Army the shooting is not so good, so that, taking the battalions all round, we could only hope for 115 marksmen. However, they vary much in proficiency, for in eleven battalions of Gurkhas, on war strength, the average is 173. If, however, the scheme of these light companies were adopted, the increased competition could not fail to produce corresponding good results, so that in time we could be certain of having always at least our 200 picked marksmen in every battalion.

Our general system of tactics then should be to oppose marksmen with marksmen; to cover the advance of our main force by a screen of picked shots, who, advancing from cover to cover to decisive ranges, should establish themselves in the best positions available and keep

* The term "first line" must be taken to include the various duties of Advanced and Rear-guards, Baggage and Convoy guards, etc.

down the enemy's fire, thus enabling the assaulting forces to advance to within striking distance of the position.

The artillery should aid the infantry attack by shelling the position, and immediately before the assault should concentrate the heaviest possible fire on the points selected for attack.

The front attack should be supplemented by a movement against the enemy's flank, threatening, if possible, their line of retreat.

Our cavalry, if the manœuvre is practicable, should endeavour to make a *détour* round the rear of the position where there may possibly be open ground suitable for their action

5. *Attack.*

It may be assumed that the enemy's position will be on the top of a hill, and, further, that it will be one of great natural strength.

If the flanks of the position rest on impassable obstacles, such as precipices or inaccessible cliffs, it will be advisable to merely feint in front while endeavouring by a flank movement to turn the position.

Front attacks require numerical superiority and involve heavy losses.

The best form of attack would be from front and flank simultaneously.

As turning movements will have long distances to cover, and often the most difficult natural obstacles to overcome, care must be taken that such detachments move off in good time. It is also most important that communication by signalling should be maintained between the different attacking forces.

Before any forward movement is commenced, the ground to be covered should be carefully reconnoitred by scouts. Should this reconnaissance be checked by the enemy's outposts, the light troops (marksmen) of the advanced-guard should be extended and pushed forward to drive them in. The neglect of this preliminary examination of the ground might result in the attacking force finding themselves confronted by some impassable obstacle which was invisible from their starting point.

Positions should be selected for the artillery from which they may be able to bring the most effective fire to bear on the position without interfering with the attacking force. The Officer Commanding Royal Artillery should cause other positions to the front to be reconnoitred in case a forward movement of the guns should be found advisable during the action.

In advancing to the attack, the pace must not be forced. The men will require all their breath and energies for the final assault.

The first line, as previously indicated, should be composed of picked shots. In ascending a hill the supports and reserves can often be brought much closer up to the firing line than on a plain, and can often cover the advance of the first line by firing over their heads.

Spurs will be found the easiest and most suitable approaches to a ridge; moreover, from these a cross-fire can be directed against the

enemy's breast-works lying between—an effective method of dislodging them.

The company, and not the battalion, should be considered as the unit of attack.

The light companies of each battalion in the fighting line should cover the advance of as many companies as the spur, or other avenue of approach, will conveniently hold, and these companies should as a rule advance, as much as possible, under cover (always extended) without firing, though, as shewn above, they may occasionally be able to make use of long-range volleys against the position. The remainder of the battalion should follow as a reserve, or a whole battalion may be retained as reserve to a brigade—there is no “normal” formation possible in mountain warfare.

On reaching the position where the light companies have established themselves, the supports will come into action, carrying the first line with them as they advance. On nearing the crest, bayonets should be fixed, as here a charge of *ghasis* is to be expected; the reserves should move up as close as possible, and some time should be allowed the troops to take breath before the final assault, which should be delivered simultaneously by sound of bugle all along the line. Cheering should not be encouraged, as it takes away the men's breath just when they have most need of it all. Should a charge of swordsmen occur, it must be met by steady individual fire, but *there must be no giving way*, and this should be strongly impressed on all ranks.

The commander should be careful to allow sufficient time for his flank attack to develop itself before ordering an assault.

If the signalling arrangements are successful, he can regulate this to a nicety.

During the ascent officers should carefully note the features of the ground in case of a retirement being ordered, which, as we shall see presently, is one of the most difficult of manœuvres.

In the event of the assault failing, the reserves should take up a defensive position on the most convenient under-feature, behind which the companies can re-form.

If the position is carried, the companies should be at once re-formed and as hot a fire as possible directed against the retreating enemy.

After a successful assault, the first care of the commander should be the issue of ammunition to the troops who have been engaged, many of whom will have empty pouches. His next should be the removal of the wounded, and the careful collection of the arms and ammunition of all casualties, so that nothing shall fall into the enemy's hands.

The question of ammunition supply during an action is one deserving the close attention of Commanding Officers.

When the mules can no longer keep up with the troops, the boxes should be opened and the packets distributed to the reserve.

Much more might be written regarding “attack,” but as no two actions will ever be alike, it is better not to multiply details, but to leave them to the discretion of the General Officer Commanding and

the Officers Commanding Units, who must exercise their individual judgment and common-sense; in this description of warfare a grain of experience is worth a bushel of book knowledge.

6. *Defence.*

The defence of standing camps has already been treated of: there remain, however, under this head two sub-sections deserving our notice—Retirements and Rear-guard Actions.

Though melting away, as we have seen, before a determined advance, the enemy, on the first sign of a retirement, seem to spring as if by magic out of the ground, and attack our rear-guard with great determination and valour.

Retirements are therefore the most difficult of operations and must be conducted with care and skill.

The enemy, having an intimate knowledge of the country, will use this in endeavouring to cut off any detached parties.

Scouts therefore should be freely used to examine the ground over which the troops must retire and give timely warning of difficult places.

Advanced-guards should always be formed as well as rear-guards.

In case of unknown ground having to be traversed, a party of sappers or pioneers should accompany the advanced-guard.

When the force is accompanied by its baggage, it should follow the advanced-guard: the artillery should follow the baggage. The cavalry must be disposed according to the nature of the country, taking care that small parties for conveying messages are left with the advanced and rear-guards.

In withdrawing from a position down hill, the spurs should be followed, as in ascent, as from them an effective cross-fire can be maintained.

All retirements should be by successive bodies. Those actually retreating should do so as quickly as possible and take up the best defensive positions available to cover the retreat of the remainder.

In withdrawing from a hill, the scouts, as the most active men, should be extended and keep up a continuous fire while the remainder rapidly retire.

As soon as the latter have cleared the hill, or reached a defensive under-feature, the scouts should descend as fast as possible, without halting to fire.

If the enemy is in great strength, arrangements may be necessary to cover the retirement by artillery and long-range fire.

In all retirements, ravines should be carefully avoided, even if they should seem to offer a favourable cover.

Rear-guard Actions.—The difficulties attending rear-guard actions have been briefly mentioned. As the rear-guard should be able to devote all its attention to its front (*i.e.*, the rear of the column), it is essential that its flanks should be protected. This is best performed as described under "**Marches—Flankers.**"

in
ad

in
ad

in
ad

in
ad

in
ad

in
ad

in
ad

in
ad

in
ad

in
ad

in
ad

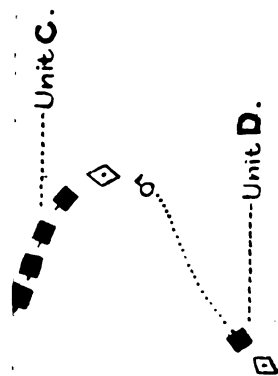
in
ad

in
ad

in
ad

in
ad

in
ad



N.B. The
One

dy.

Under "General Principles" (No. 11) it is propounded that, to ensure the best results, the onus of protection should be divided. I will now explain how this may be done.

Suppose a brigade consisting of—

Squadron	...	...	...	1
Mountain Battery	...	...	...	1
Sappers	...	...	...	1 company.
British Infantry	...	...	...	1 battalion.
Native	„	...	...	3 battalions.

Under this scheme a force of three companies will be sufficient to form the rear-guard.

The infantry battalions being distinguished as Unit A, B, etc.; (plate 1) will show the distribution of the force, with its baggage, etc., on the march.

In accordance with a scheme to be discussed farther on under "Transport," one company from each unit, except A, is shewn employed in controlling the baggage drivers.

Unit A will be entirely occupied with its duties on advanced-guard and providing flanking picquets.

Units B and C will each have half the battalion with the main body and three companies each in rear of all the baggage, immediately preceding the rear-guard.

On the rear-guard becoming seriously engaged, orders may be issued for its relief at stated periods, say hourly. At the appointed hour, a new rear-guard would be thrown out by the three companies of Unit C, immediately preceding, who would sustain the fight for one hour, the relieved rear-guard passing through them and falling into their place in the column.

In like manner, the next hour Unit B would relieve Unit C, which would follow in rear of Unit D, and so on in rotation, the three units alternately relieving one another at periods of an hour.

Each of the three rear-guard units should be provided with a proportion of stretchers and ponies for the conveyance of the wounded.

If considered absolutely necessary, the relieved flank picquets of Unit A may be ordered to fill gaps caused by casualties in the other units, but this, if possible, should be avoided, as they will already have completed a fatiguing duty.

As one marksman in a rear-guard action is worth three bad shots, the light companies are the best suited for this kind of fighting.

The advantages of this scheme are five-fold—

- (i) Great stimulant to the *morale* of the fighting body.
- (ii) Increased care and protection for the wounded.
- (iii) Increased safety of the baggage train.

- (iv) In the event of the main body marching away from them, the rear-guard, consisting virtually of nine companies instead of the usual four, will be sufficiently strong to disengage itself from any ordinary situation, and to retire in good order into camp, without the danger of being left out for the night.
- (v) Our casualties have always been heaviest in rear-guard engagements. By the above arrangement the losses would be distributed amongst units and not fall entirely on one battalion.

7. Transport.

Of all the difficulties which beset the organisation of expeditions beyond our frontiers, "Transport" is the most troublesome; and happy is the commander in mountain warfare who has not cause to curse his transport at least three times a day.

To begin with, there is the difficulty of procuring the necessary number of animals; then there is the impossibility of providing the requisite number of drivers, so that frequently impressment has to be resorted to, and a pressed man is proverbially of little use.

Although carts, bullocks, coolies, camels, and ponies can be utilized on lines of communication, and in places where roads exist, they are none of them, except the latter two, of any use in a mountain tract. Camels have been used on a pinch, but are bad travellers in the hills: ponies are inferior to mules, but are the best substitute. The only dependable animal is the mule.

The present system of having but one driver to three mules is a bad one; but, owing to the difficulty of procuring even this proportion, I do not propose an increase, but would merely observe that if three mules must be linked together, the *worst* (i.e., weakest) should be in front. The heart is taken out of a good mule by having to drag after him a weakling; it gives him double work. Then also in bad places on the track if the best mule is in front, he is apt to drag over the other two, so that frequently they stumble and their loads become displaced—hence sore-backs.

The troubles of the commander are not, however, caused by the animals, but by the drivers. This unarmed rabble of, too often, unwilling men becomes panic-stricken when an attack occurs; they either forsake their animals, or drive them wildly hither and thither—off the road—into ravines (where they are often ambuscaded)—across paddy-fields, thinking to make a short-cut, or down by-paths with the same view, whereby they often become benighted or lost. At all times, even when there is no fighting, it is most difficult to make them march in the formation ordered, or abstain from crowding and jostling each other at difficult places, whereby, on numerous occasions, animals have fallen over precipices.

The following extract from a description of a march in the Bara Valley from "The Risings on the North-West Frontier. 1897-98"

(*Pioneer Press*), will give an idea of what actually takes place during a contested march :—

"The enemy pressed the rear-guard and flank of the baggage from the first, the mist which prevailed enabling them to creep close up unobserved; the ground except in the stony bed of the stream was heavy and yielding, and the cold and wet combined with the constant fording of the stream seemed to deprive the mule-drivers and followers of their senses and to leave them with one idea only, *vis.*, to press along as fast as possible, quite regardless how their animals or loads were getting on, and to escape the enemy's bullets constantly flying over their heads. Some extraordinary scenes ensued. Brigadier———called several halts in order to close up the transport and rear-guard, and to send out fresh troops to guard the flanks of the line of march. * * * The moment, however, the head of the column moved on, the wave of transport swept on after it like a pent-up stream suddenly released, spreading out sometimes to a front of half a mile or more; every man pushing blindly forward, all anxious to avoid fording the river, in places knee-deep, and all acting on the principle of "each man for himself and the devil take the hindmost."

Twenty times the number of Transport Officers could not have controlled this seething mass: it was an indescribable jumble, sometimes all jostled together on a front of 100 yards, and sometimes spread out to a width of over 800 yards.

Those who took short-cuts across country, despite every endeavour of the Transport Officers to stop them, seemed to be gaining ground at first, and others madly followed them; so that everywhere were animals either bogged or slipped up in ditches with their loads under them, or with the chain broken between them and the leading animal, while the *drabi*, all unconscious, pressed on blindly. Where soldiers, British or Native, were with the animals, the situation was of course different, and the *drabi* could then be stopped, but only by main force. *

* * * Darkness now came on rapidly, the rain continued, the road to camp was difficult to see, and many *drabis* stupidly made a bee-line for the lights. Most of these animals and loads got eventually lost. * * * Many drivers deserted their animals * * * while some kahars either broached a keg of rum or found one already broached, and got hopelessly drunk. * * * Next morning between 100 and 150 animals with their loads were missing, and one unit lost as many as 50 animals."

This graphic description tells its own tale and points the moral—how very essential it is that these drivers should be brought under proper control.

The only way to accomplish this is to detail a sufficient number of disciplined men (*i.e.*, soldiers) for this most important duty.

A brigade of the strength given would normally have 1,934 mules; (+ 52 cavalry ponies, not counted) adding 500 for commissariat, we get 2,434—say 2,500 mules.

If each infantry battalion were to detail a full company, with its officers complete, for baggage control, this would give one man to look

F

after six or seven animals, and the state of chaos above described would be done away with for ever.

These companies should be quite distinct from the baggage guard: their duties are not militant (except when the baggage is attacked when of course every man must aid in repelling the enemy).

They should be instructed to strictly enforce the prescribed order of march, to prevent any straggling or jostling, and to see that the column moves at a steady even pace.

At present the baggage train is so extended that any portion of the guard is invisible to the greater number of the drivers, who, unarmed and timorous, feel their helplessness acutely, and this induces the state of panic described.

Under this scheme there would be several armed men in view of every driver which could not fail to give them confidence in their safety.

Moreover, in spite of all precautions hitherto taken, instances have occurred where daring parties of the enemy have made a dash at the baggage *en route* and looted a portion, killing the drivers. In these new conditions there would be sufficient guards at every point to repel any such attempt.

In leaving the subject of transport, there is one point to note—that is, that when gunny-bags become empty they should never be thrown away or left behind, as these, filled with earth or stones, form a most useful adjunct to the defences of a camp.

8. *Convoys.*

Next to rear-guard actions, perhaps the most trying and difficult of operations in mountain warfare is the escort of convoys.

The force required for protection will vary in strength according as the convoy is moving on a line of communications with fortified posts at intervals, or in the heart of the enemy's country with no such *points d'appui*. The escort may either accompany the convoy for the whole march, or, if convenient, it may take half the road, the post of destination sending another escort half way.

The flanks of a convoy must be carefully protected by picquets which are disposed as described under "Marches." Hence at starting the advanced-guard should be considerably stronger than the rear-guard which will be continually reinforced by the flank picquets falling in.

A small party of cavalry should, if possible, accompany convoys for carrying messages, orders, etc.

Brigadier-General Egerton, in his excellent pamphlet—"Hill Warfare," gives the following distribution of an escort which may be taken as a model:—

Advanced-guard and flankers	...	2 companies.
At 1st mile	...	1 company.
„ 2nd „	...	2 companies.
„ 3rd „	...	1 company.
„ 4th „ rear-guard	...	2 companies.

It being very essential that all convoys should arrive at their destination before dark, the strength of the train should be regulated accordingly and the length of march limited, according to the state of the road, to such as can be conveniently traversed during the hours of day-light.

In case of attack, the convoy should not halt, but press on: the task of defence will lie with the escort, and a halt, blocking up the road and causing unavoidable confusion, would not only hamper the defence, but be favourable to the enemy.

All straggling should be prevented, and the drivers warned to keep well closed up.

As all convoys will have a force of their own in front of them, attacks by large bodies of the enemy are not, as a rule, to be apprehended, but at every favourable point they are liable to sudden raids from daring small parties eager for loot. It will be the duty of the flanking picquets to guard against such attacks.

9. Foraging Parties.

A somewhat similar duty is the defence of foraging parties. These should never go far from camp, as they run the risk of being overtaken by night-fall before being able to return. A force should be sent on ahead to picquet the road, and these picquets should be so disposed as to prevent the baggage animals from being fired on. An escort should accompany the animals, but during the retirement this alone will be insufficient for defence. A retreating foraging party is almost invariably attacked, and a force should be sent out from camp to cover their retreat. This body should take up the best available position to effect their object while the escort forms a strong rear-guard. The flanking picquets must remain out where posted until the latest safe moment when they should join the rear-guard. As forage, etc., is most often to be found in valleys, cavalry will be useful, not only for scouting, but for checking the enemy's advance into the open.

10. The destruction of village defences.

When a detachment is sent out from camp for the destruction of villages, the advance should be conducted very much as described for "Reconnaissance." Once the village occupied, a *cordon* of picquets should be posted while the work of destruction is being carried out. The retirement will most likely be harassed by the enemy, a strong rear-guard therefore is necessary. If the fighting is very severe, it may be found necessary to send out a covering force from camp. Where the route lies through a valley, cavalry should accompany the detachment.

11. Equipment.

There are a few points under this head which need attention. First, the fighting dress. The type of coat worn at present by British and Native Infantry on field service has many faults. I think the fact has scarcely yet been recognized that the same dress will not do for peace and war.

In peace, before all things, the soldier should be *smart*; in war, he should be *comfortable*, and his dress should be suitable to the conditions of field service. The two cannot be amalgamated, and it therefore follows that there should be a special dress for war.

A new invention—"Millerain Khaki Drill"—has not, I think, received sufficient consideration for military clothing. It is perfectly water-proof, and at the same time is cool and sanitary wear. As regards its imperviousness to damp, I have subjected it to severe tests, including boiling water, and found it most satisfactory.

The field service coat might be made of this material. It should be of the "Norfolk shooting jacket" shape, very loose, with a turn-down collar that can be buttoned up in wet weather, and should be of sufficient length to allow of two capacious pockets below the belt, as well as two above: these pockets should have flaps; there should also be an inside pocket. On the upper part of the shoulders and sleeves the material should be double, as a frequent duty on service is the carrying of firewood, materials for *abatis*, etc., from which these parts are liable to tears. With such a coat, any amount of warm clothing can be worn (underneath). Plate 2.

This is a great advantage, as in wet or very cold weather the great-coat might be dispensed with. If every man were provided with two thick fisherman's jerseys with long sleeves, to be worn over the flannel shirt, and a couple of pairs of warm long under-drawers (the trousers also being "Millerain"), he would be warm and dry in bad weather and at the same time always in fighting trim.

In mountain warfare fighting in a great-coat places the wearer at a great disadvantage.

In this way the weight of the kit might be reduced by—

			lbs.	oz.
Cloth trousers	...	...	2	3
Serge coat	...	...	2	0
Two flannel belts	...	...	0	12
Cardigan	...	...	1	12
			<hr/>	<hr/>
			6	11

So, if considered advisable, the great-coat might be left behind (a saving of 6 lbs.) and for night duties the soldier might wear both his jerseys under his coat. At present the great-coats alone of a battalion require 30 mules as transport. The omission of the articles above enumerated would mean a saving of another 34—total 64 mules per battalion.

The pouches issued to the infantry soldier are heavy and interfere with his marching.

Again if, in the excitement of an action, he forgets to buckle it, before he has gone far over broken ground it is empty.

The cross straps should be done away with, as they interfere with a man's movements, and two ammunition bags, shaped like the ordinary

PLATE

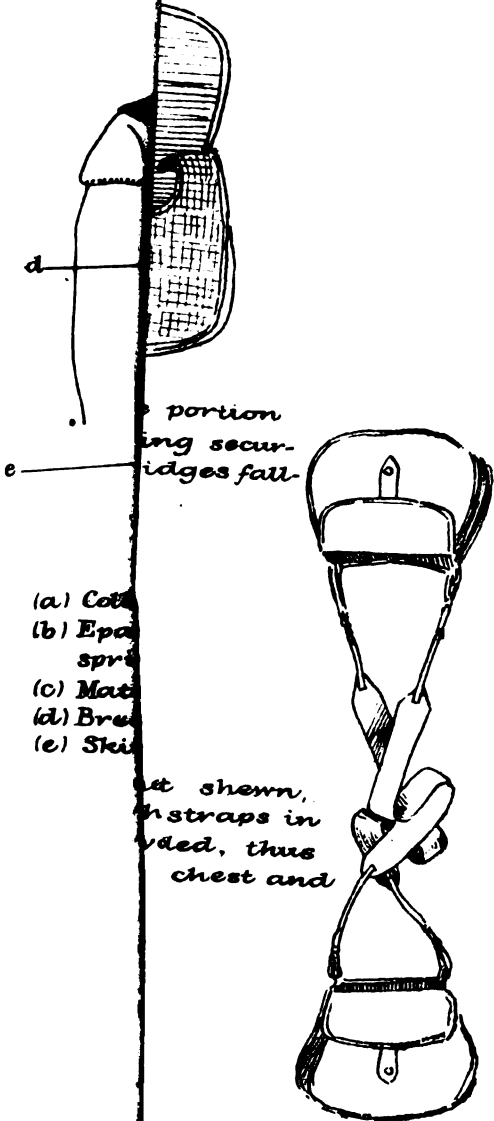
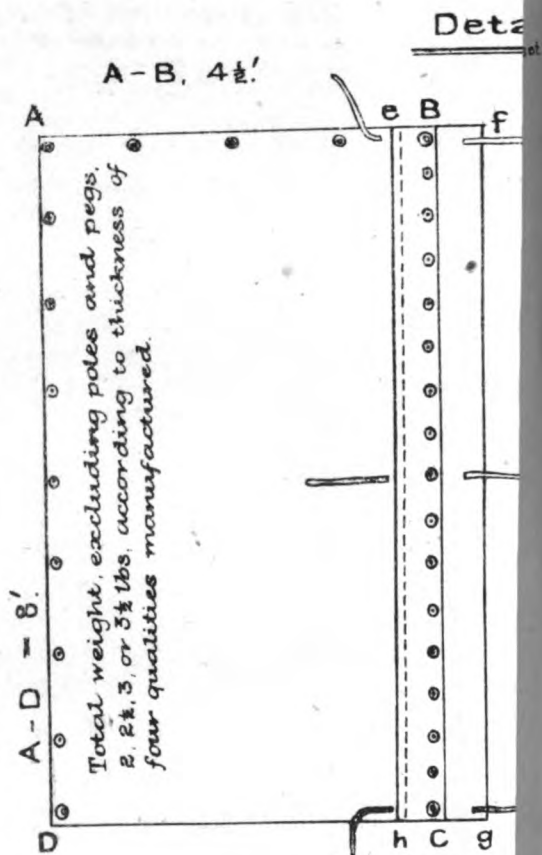


PLATE III.



ABCD. Sheet of "M"
efgh. Flap to p
ill Tapes to

Each man to carry
shoulder, one s
and 3 pegs. Tw
in kits, or on s
(800 men.)

sporting cartridge-bag, should be carried, one over each shoulder and prevented from swinging by the belt passing over the straps. Both bags and straps should be made of water-proof canvas. The mess tin should be attached to the belt by a hook, and if the great-coat must be carried, it should be rolled over the left shoulder.

The trained scouts might be armed with a carbine instead of the long rifle. The lighter weapon is very accurate up to 1,000 yards, and, provided with a sling, it could be carried on the back when climbing difficult places. The scout's duties are of observation principally, but when employed in fighting he would not be handicapped by his armament, as there are many experts who declare that the Lee-Netford carbine is a better weapon than the rifle.

The question of the officers' head-dress has been much discussed of late; I do not think the present helmet can be improved on. It throws a strong shadow on the face for one thing, which prevents a white face showing prominently in front of native troops. An officer is much more easily marked by his sword than his helmet.

The sword might be relegated to its proper place as a badge of rank in peace, and for weapons the officer might carry two revolvers.

The boots should be shod with brass, not iron. In a country like the frontier iron shod boots are not only a source of danger from slipping, but also it has been found that, after constant wading in the streams through which the roads pass, the iron nails get rusty and fall out. By the use of brass nails and tips these inconveniences would be avoided.

The present ammunition boxes are difficult to open, and it is hard to get the ammunition out. An improved pattern is required.

Some of the greatest hardships to our troops during the late Tirah Campaign were occasioned by the men having to sleep in the open without tents in cold and wet weather.

This should be avoided in future by means of *tentes d'abri*. If every man, in place of his great-coat, carried a sheet of Milleraised drill, 8' x 4' 6", made with eyelet-holes to lace together, a tent might be formed to accommodate two men which would be warm and dry (plate 3). During one campaign beyond the frontier I carried (in a valise behind my saddle) a tent made of ordinary khaki drill which weighed only 6 lbs. in which I slept for many a night in snow and rain with perfect comfort.

As ropes for these shelters will be required and will be a vanishing quantity, each soldier might be provided with 30 feet of log-line and a small ball of English whip-cord when mobilized and a stout jack-knife might be added to the equipment of non-commissioned officers.

12. Training of troops.

The first and main point to be attended to in the training of troops for frontier warfare is musketry instruction.*

* The improvement of shooting of course applies to artillery as well as infantry; but regards this arm and also cavalry, the present system of training seems to be all that can be desired.

To meet the frontier tribes on their own ground and in accordance with their methods of fighting, we require an army of skilled marksmen. Increased impetus should be given to competition in this most important of all military exercises. This might be done by increased rewards for good shooting, by a larger allowance of practice ammunition, and above all, by the institution of the light companies already referred to.

The first essential for the ideal soldier is to shoot well; the next, to march well: these, with perfect discipline and good conduct, make him a first class fighting machine.

Let the course of musketry training be so modified as to lay greater stress on accuracy of individual fire, especially at disappearing targets. Special prizes might be authorised from regimental funds for inter-company competitions, which should include matches for rapid firing, which is at present rather wild and uncertain. Pool shooting, as a sport, should be encouraged, and every facility given the troops for using the ranger for recreation. At present musketry is too often looked upon as an irksome duty.

The next important point is marching, and in this we are now on the right road towards perfection. Orders have been lately issued for extended cold-weather marches for all troops in India whose manœuvres hitherto have been restricted to the environs of their cantonments. This is as it should be, and cannot fail to improve our marching powers.

In view of the great importance of the proper control and supervision of the baggage train in hill warfare, increased instruction is required in the method of loading baggage animals. Instead of a few selected officers and men being trained in this branch, *every officer and soldier in the army should be so trained.*

This could easily be carried out at squadron and company training annually.

For this purpose, camels, mules, etc., with their pack saddles, might be lent to corps by the Commissariat or Transport Departments.

There are at present sufficient instructors in almost every regiment to efficiently conduct the training. What the men require is to be able to see at a glance if an animal's load is in its proper position, and if not, to be able to set it right.

As regards the training of scouts, something has already been said. This is a matter within the powers of every regimental commander, but to ensure its efficient conduct, a General Order on the subject is needed.

The last point I shall mention (and it must be here observed that the whole subject is one which would require a special essay to itself, but that the limitations as to space of this competition prevent me from more than touching on it) is athletic training. The soldier in India is naturally inclined to a life of repose when not actually on duty: this is easily accounted for by climatic influences, but it should be the aim of all ranks to overcome this tendency, and athletic exercises of all sorts should be encouraged. Nothing useful can be hoped for in this direction

unless the officers take the lead. At present polo is the officers' game, and in this the men cannot join. It should be the aim of commandants to encourage such games as cricket, foot-ball, hockey, wrestling, single-stick, gymnastic feats, etc. Prizes for gymnastics might advantageously be increased, and every advantage should be taken of hilly ground in the neighbourhood to accustom men to move rapidly up and down hill and over broken ground.

These are the principal points requiring our careful attention in the training of our troops.

If the soldier can shoot and march and besides is obedient and well conducted, he only requires wings to make him perfect in his calling.

We have now concluded the consideration of the first part of this subject, *i.e.*—"War with the Frontier Tribes." There remains to be briefly viewed the second part, *vis.*—"War with an Invading Army" under its two-fold aspect.

WAR WITH AN INVADING ARMY, THE FRONTIER TRIBES BEING FRIENDLY.

If such a state of things ever takes place, our advantages over the enemy will be very great. With the tribes on our side, we could make, at the commencement of hostilities, an accurate survey of hitherto unknown regions, and thereby greatly increase our chances of success. Then the question of supplies would be greatly simplified: we should of course have to pay for them more than their market value, but in case of an invasion this would be a minor consideration. These tribesmen, moreover, being excellent fighting material, and possessing in a high degree the best qualities for *guerilla* warfare, would be to us most valuable allies.

Officered from our army, they would hang on the flanks and rear of the enemy, and cause them incessant irritation and loss.

They would cut off their convoys, harass their camps, and in short do them more injury than they have ever done to us.

The general tactical principles of such a war would be very similar to those already given, with such modifications as the enemy's methods of fighting might seem to indicate. For example, if they should favour close formations, we might make use of volley-firing with advantage, and so on.

Then, again, we should not require all the harassing flanking precautions on the march above described, and instead of having to find our own roads, we should have reliable guides.

Levies of friendlies could, to a great extent, be utilized on our lines of communication, thereby releasing a large number of troops, who would otherwise have to be thus employed.

Under such conditions we should be in the most favourable position for carrying out the existing scheme of defence of our frontiers from foreign invasion.

We should not, however, be blind to the danger which lies in the untrustworthiness of these frontier tribes. It is very possible that at

first they might pretend to be friendly, and their first demand would assuredly be for arms and ammunition. If we provide them with these, we may possibly be putting into their hands weapons to be used against ourselves. It would be well therefore under such circumstances to arm them with rifles of an obsolete pattern, and strictly limit their supply of ammunition, which might afterwards be increased if their conduct were such as to inspire us with confidence in their loyalty.

There will always be three courses open to these tribes should India be threatened by invasion; to join us, to join the enemy, or to fight impartially against both sides, and it will, to a great extent, depend on our policy in the mean time towards them, which line they will elect. The fourth possibility, their neutrality, I think may be neglected.

The Pathan is, like the Irishman, always "Spoiling for a fight."

This brings us to the consideration of the second aspect of such a contest.

WAR WITH AN INVADING ARMY, THE FRONTIER TRIBES BEING HOSTILE.

As before stated, this is properly more a question of strategy and policy than of tactics, for which reason I will limit my remarks to a few words.

In the event of India being threatened by invasion from the north-west, during the present reign, I think we might safely depend on the loyal co-operation of the Ameer of Afghanistan; the question is how far this would be useful.

The Ameers in the past have not had that control over their lawless and turbulent people which would give them the power to turn their fighting forces into any given direction at will.

The tribes are above all things clannish; they hold by their tribal heads, and these are not always inclined to accept the sovereignty of the Ameer.

The tribes then that we should find hostile under such circumstances would be those least under the Ameer's control, and least amenable to our influence—in fact, the very tribes that we have lately been at war with in 1897-98.

The policy therefore of taking up any forward position, the lines of communication of which lay through their districts, would be one exposed to great disadvantages. We should have to fight a double foe—one enemy in front—another all around us. A strong division of all arms would be required to protect our convoys and communications; another of equal strength would be necessary to deal with any serious combination directed against our flanks, and thus a whole army corps would be occupied in minor operations apart from the main scheme of defence. To avoid this, it would be advisable to select a base of operations in another direction, keeping at the same time a close watch on the country north and north-west of Cashmere, in which we should have the loyal co-operation of that State. The

Khyber should be strongly watched, and, if considered necessary, an advance made for a certain distance in this direction. A railway would form our line of communication with our base.

The whole country west of this line is now under our friendly influence and control, and the inhabitants are apparently of a peaceful disposition. The line itself would need to be strongly guarded at important strategical points to the eastward, as it is from this direction that attacks from the hostile tribes are to be apprehended.

Our tactics generally should be to work on interior lines; by rapid concentrations to oppose the enemy's advance at chosen points in superior force, aiming particularly at their flanks in order to cut off a portion from their line of retreat. Every use should be made of friendly levies who, from their intimate knowledge of the country, would afford us valuable assistance.

Our cavalry should be well pushed forward to supply us with early information of hostile movements. Mounted infantry signalling parties should accompany the independent cavalry division, and establish posts at convenient intervals, which posts must be adequately guarded.

Our artillery should be massed at important strategical points in the greatest possible force. We shall in all probability be greatly outnumbered in this arm, and care therefore should be taken against undue decentralization of our batteries.

In conclusion, our permanent fortifications and field works should not be looked upon as mere defensive posts, but rather as subsidiary bases from which effective counter-attacks may be delivered with the greatest advantage.

SECOND SIKH WAR, 1848-49.

BY LIEUTENANT-COLONEL H. M. SINCLAIR, R.E., ASSISTANT
MILITARY SECRETARY, BENGAL.

Wednesday, 28th June 1899.

THE HONOURABLE MAJOR-GENERAL SIR E. COLLEN,
K.C.I.E., C.B., IN THE CHAIR.

In the lecture, which I had the honour to deliver in this hall last year, I gave an account of the 1st Sikh War or Campaign of the Sutlej. I have been asked to-day to relate the events of the succeeding war or campaign of the Chenab, an inevitable sequel to our first encounter with the Sikhs which broke their power without taming their spirit. The Sutlej campaign was terminated by the decisive victory of Sobraon and resulted in the restoration of the young Maharaja Dhuleep Singh to the throne of his supposed father, the great Ranjit Singh. During his minority the Government of the Punjab was to be carried on by a Council of State, with the advice and practical control of a British Resident, and supported by the presence at Lahore, for a time at least, of a British force. Under the wise and firm guidance of the celebrated Sir Henry Lawrence, the country soon settled down into apparent quiet and content. The reforms projected by Sir Henry Lawrence were supervised in execution by the remarkable staff of able young men whom he selected for this work and to whom were entrusted powers such as in these days are hardly committed to the hands of the highest authority. The names of Nicholson, Edwardes, John and George Lawrence, Abbott, Lumsden, Lake, Reynell Taylor, Pollock, Hodson, and many others are still well-known to every one in India. They went alone and unescorted into the furthest borders of the Punjab, so lately arrayed in arms against us, and by their personal character and impartial administration established a prestige amongst the tribesmen, which in some instances enabled them after a few months to raise large irregular forces, when the whole country was seething with treachery and rebellion; and in others converted the affection of the people into enthusiastic adoration and even worship. This, however, is not the place to enter into details of Lawrence's civil administration of the Punjab, except in so far as it explains the circumstances of the outbreak of the ensuing war. Lawrence himself was removed by illness after a few months, and his place was taken by Sir F. Currie, a man of ability, trained in the strict routine of our more settled provinces and of necessity a stranger to the intricate



intrigues of Lahore politics. Affairs went on so smoothly that a healthy settlement of the state seemed assured. The people under lightened taxation appeared contented; the officers in distant provinces, who really governed large tribes subject to, and lately oppressed by, the Sikh Government, reported the success of their mission with just pride. There remained, however, two elements of danger that could not be overlooked—the intrigues of the Queen-mother, the most able, restless, and unscrupulous politician in Lahore, and the power of the Khalsa or Sikh army. The latter were fully aware that their late defeats had been due more to treachery than to fair fighting, and saw the traitors reaping the reward of their combined cowardice and treason, whilst they had lost their employment, their ample pay, and their power in the State. The Sikh Sirdars were accomplished diplomats and intriguers, and while fully aware of the progress of the rebellious spirit, lulled our agents into fancied security. Therefore, whilst the surface appeared smooth, the stream beneath was working into more and more troublous currents, the fire was smouldering below and needed but a spark to set the whole edifice of our rule in a blaze.

That spark was struck in an unexpected quarter. The Government of Multan, a distant and semi-independent province of the Punjab, had lately passed from the rule of Sawwan Mull to his son, the Diwan Mulraj. Discontented with the largeness of the "succession duty" he was called upon to pay, and the increased stringency of the audit of his accounts, Mulraj expressed his desire to retire into private life and give up his governorship. After much discussion and intrigue, his offer was accepted and arrangements were made to take over the government of the province. Sirdar Khan Singh, a loyal Sikh, was appointed to that office, and two young English officers—Vans Agnew of the C. S. and Lieutenant Anderson—were ordered to accompany him with an escort of the Sikh army. The escort marched by road and the British officers by the more luxurious river route, thus losing an opportunity of gaining the personal affection of their troops which might have stood them in good stead in the end. They met before Multan on the 17th April 1848 and took up their residence in the Idgah, a mosque about $\frac{1}{2}$ a mile from the fort. Next day they received a visit from Mulraj, who appears to have gone away dissatisfied with the terms of the proposed settlement of his charge. On the following day the Sirdar, Agnew, and Anderson proceeded to the fort which was then considered the strongest fortress in the Punjab and received over charge from Mulraj, posting their own escort in relief of the Diwan's troops. As they left the Fort and were crossing the draw-bridge, a man of the late garrison struck at Agnew as he rode by Mulraj's side and severely wounded him. A tumult ensued. Anderson was also cut down, while Mulraj galloped off to his private house, leaving the officers to their fate. Sirdar Khan Singh managed to extricate them and carry them off to the Idgah on an elephant, Anderson completely incapacitated, and Agnew somewhat less severely wounded and able to communicate the news to Lahore and to Edwardes at Bannu. Next day guns opened on the Idgah from the fort and Mulraj's house. The escort melted away and went over in detail to the rebels. Before sunset all that were left around the wounded

Englishmen were the Sirdar Khan Singh, some 8 or 10 faithful horsemen, their domestic servants, and the munshis of their office.

A last effort was made to obtain protection from Mulraj, but it was fruitless. At night a mob from the city, fort, and suburbs invaded the now defenceless mosque, murdered the two officers and their followers and carried off the Sirdar, faithful to the last, into the presence of Mulraj as a prisoner. The die was now cast. Multan was in open revolt, headed by Mulraj himself. How far was the insurrection to spread?

On the receipt of the first news sent off by Agnew, Sir F. Currie was inclined to make light of the event. Further information showed it to be more serious, and a large Sikh force was ordered to march at once on Multan, supported by a British column. But when full information of the mutiny of the escort and the murder of the Englishmen was received, it was seen to be a more serious affair, and that the Sikh arms was utterly untrustworthy. The British troops at Lahore could not be spared, and Sir F. Currie sent urgently to Lord Gough, the Commander-in-Chief at Simla, asking for a British force to be sent at once down the Ravi for the reduction of Multan.

Lord Gough, however, considered the season too advanced for military operations by British troops, and decided, with the concurrence of the Governor General, Lord Dalhousie, that nothing could be done till the autumn.

Meanwhile a British subaltern stationed alone on the wild borders of Waziristan had decided that something must and could be done. Herbert Edwardes, the Assistant Resident at Bannu (now called Edwardesabad), was one of those gifted heroes who are able to compel all around them to obedience and devotion. He had with him as escort in his task of revenue settlement a force of 1,200 foot, 350 horse, and two guns, all Pathans from the border. On receipt of Agnew's last message, he determined to march against Mulraj; crossed the Indus and reached Leia. Here he heard of the death of his colleagues at Multan, that no force was to move from Lahore, and found that his own troops were prepared to sell his head and their services to Mulraj, who was sending a force against him. It would have been small wonder if he had given up so desperate a venture at such a season as the beginning of the Punjab hot weather. Nothing of the sort, however, entered his head. He retired again across the Indus, recovered his authority over his men, effected a junction with the Sikh General Van Cortlandt, with a trusty regiment of Mussulmans and some guns, raised large levies of "bold villains ready to risk their own throats or cut those of every one else," and on the retirement of Mulraj's men from Leia, again threw an advanced picket into that place. It should be noted that from this time on General Van Cortlandt served under Lieutenant Edwardes. Another attack on Leia was vigorously repulsed, and the defeated Multanis were pursued by sowar levies, but a fortnight old, with such success that the Sikh leader, Jus Mull, only saved himself by hiding in a tobacco field, thereby anticipating by three months the ever memorable exploit of the King of Munster.

The Sikhs then tried to cross the Indus lower down, but Edwardes by a rapid movement by land and water was beforehand. A friendly

Beloochi chief attacked Dera Ghazi Khan, defeated the Sikhs there, and seized all their boats, and thus the whole trans-Indus territory was lost to Mulraj. Edwardes now effected a combination with the loyal Mussulman chief of Bahawalpore and crossed the Indus to his assistance. Mulraj had sent a force to meet the Bahawalpore troops which had moved to Kinairi, while the Sikh army was halted at Sujabad. Edwardes arrived on the 17th June on the banks of the Chenab and found the Bahawalpore troops in possession on the opposite bank and the Sikhs drawn up ready to attack them. Matters looked most unpromising, Van Cortlandt with the guns and main body could not be over the river till late next day, the Bahawalpore troops were ill-disciplined and badly posted, and their commander did nothing but sit under a tree and pray. Edwardes' personal influence soon brought some sort of order and discipline into this whole force which he had never before met. The Sikhs attacked on the morning of the 18th June, a happy augury to Edwardes. By great exertions he managed to restrain the eager impetuosity of his own men, and keep up the heart of the less steady forces of Bhawal Khan for six long hours, until Van Cortlandt with his main body had crossed the river and was ready to take part in the action. Just as the whole Sikh army was advancing to the attack, Edwardes' main force came in on their right flank, turned the tables on them and drove them from the field in precipitate flight to seek the shelter of Multan. Thus with his own wild levies, the few loyal and steady troops and guns of Van Cortlandt and the unseasoned troops of Bahawalpore, an English subaltern defeated, with no superior odds, the flower of the trained Sikh troops of Mulraj's army and completely broke down their *élan*.

He had now 18,000 men and 30 guns in his force, and he urged on the authorities to send a siege train from Ferozepore with which he hoped to reduce Multan at once being confident that it was not yet in a condition to stand a vigorous siege. This proposal was, however, negated at Head Quarters. But meanwhile he had advanced towards Multan, and on the 1st July fought another battle close to the city at a village called Suddoosam, where he again completely defeated the force sent by Mulraj to oppose his advance and practically shut him up in his fort and city. But a new anxiety was now thrown on his shoulders. A Sikh force under Sher Singh had been sent against Multan from Lahore, but with orders to halt on the Ravi at Tolomba. Sher Singh, however, with 5,000 men, moved on to Multan and joined Edwardes, who, very suspicious of his loyalty, felt his presence to be only an embarrassment and posted him in rear of his own force to prevent his communicating with the enemy.

Meanwhile Edwardes' urgent letters and his brilliant successes had roused Sir F. Currie to action, and he despatched on his own authority the British Lahore Brigade to take part in the siege. The Commander-in-Chief and Governor General grudgingly acquiesced in this move which began on the 24th July, and as it was a *fait accompli*, decided to re-inforce it by the Ferozepore Brigade. The force thus consisted of 7,500 men, including two British regiments (10th and 32nd), with

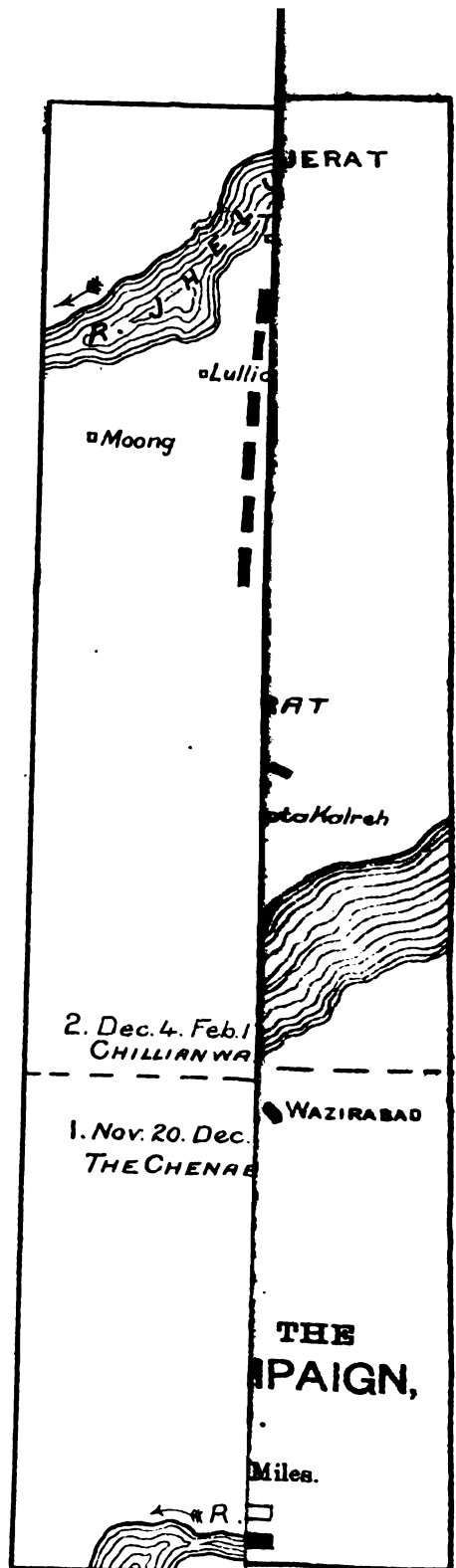
cavalry, artillery, and siege train, the whole under the command of General Whish with Major Napier, R.E.,* as Chief Engineer.

Whish arrived before Multan on August 18th and found Edwardes encamped at Surajkhund, about 6 miles from the city. His first care was to draw Edwardes closer to him and the city by about 2 miles, a movement not carried out without hard fighting, in which Lake, who had joined the Bahawalpore troops after Kinairi and Pollock,† distinguished themselves. Pending the arrival of the siege train which, for want of transport, was rather long delayed, Whish and Napier reconnoitred the fort and found it "no contemptible place of arms." They could do nothing till the heavy guns arrived on the 4th September. Meanwhile news arrived of the outbreak in the north-west (which will be dealt with later on), and the fact that Chattar Singh, father of Sher Singh (who commanded the Sikh troops allied with the besieging force), had placed himself at the head of it. Sher Singh for a time professed undeviating loyalty, during which fresh engagements took place with the Multanis, and the army drew more closely round the city. On the 12th, after a hot encounter, Whish found himself within battering distance of the walls and felt confident that in a few days the place would be his, when at the critical moment Sher Singh, with all his followers, marched from their camp and joined the rebel forces. The prosecution of the siege, difficult enough in such weather and with such heterogeneous elements in the army, became now impracticable. Whish withdrew his remaining forces to the original position about Surajkhund, while Sher Singh, finding his reception from Mulraj cold and distrustful, marched off to the north to raise the old Khalsa army against the British with the avowed object of sweeping the Feringhis from the Punjab. This movement gave the final decision to the Sikh Sirdars and in fact opened the 2nd Punjab War. Lord Dalhousie recognized its character and announced at Calcutta that "unwarned by precedents, uninfluenced by example, the Sikh nation has called for war, and on my word they shall have it with a vengeance." There could no longer be any doubt. The Khalsa had resolved to strike a blow for their national independence.

It now became necessary to organise a regular field army to oppose the gathering of the Sikhs. This army was drawn from Bengal and the north-west where the error of Lord Hardinge's policy in reducing the army after the Sutlej Campaign was now seriously felt. Early in October Lord Gough issued a general order announcing the formation at Ferozepore of an army to be styled the army of the Punjab under his personal command. To prosecute the siege of Multan, it became necessary to bring up troops from Bombay. Orders were issued to this effect before the end of September, but it was not until the 26th of December, that they arrived, so that three whole months elapsed before Bombay could manage to relieve a force only just beyond her borders. One curious reason for delay appears to have been that the Bombay Government appointed General Auchmuty to command, who would have been senior to Whish, while the latter held his commission to command the siege army from the Government of India. Auchmuty had ordered the Bombay troops not to move till he joined them, so a dead-lock

* Lord Napier of Magdala.

† Sir F. Pollock.



occurred until his orders were cancelled, and Brigadier Dundas was appointed to command of the Bombay column.

To give in detail the operations of the regular or 2nd Siege of Multan would require a lecture to itself and much as I should like to follow out its course, time does not permit me to do more than touch on the salient points of the siege. After the arrival of Dundas, Whish's force amounted to 17,000 men with a train of 64 heavy guns. Mulraj was estimated to have at least 15,000 in Multan city and fort. It was therefore impossible to make a regular investment of the place according to the rules laid down in the text-books, which say that a force of from three to four times the strength of the garrison is necessary for a besieging army. It is, I think, remarkable that in the three great sieges undertaken by British forces since 1815, Multan, Sevastopol, and Delhi the recognized laws of war have been thrown to the winds and the places taken with, theoretically, entirely inadequate forces.

The plan of attack drawn up by Colonel Cheape, R.E., who had superseded Napier as Chief Engineer, was to encircle the advanced trenches on the south-east of the city which the Sikhs had thrown up during our three months' forced inaction, and after capturing them, to attack and breach the city walls on the same side. A series of successful operations from the 27th to the 30th December enabled us to plant our breaching batteries within distance of the Koonce Burj and the Delhi Gate of the city. The assault was delivered on the 2nd January on both these points. The breach at the Delhi Gate was found insufficient, but the Bombay Fusiliers stormed the Koonce Burj, opened the Delhi Gate, and the two columns acting together, cleared the whole south side of the city, opened all its gates and the place was ours. Mulraj retired to the fort, keeping with him a garrison of 4,000 picked men, closed the gates and left the rest of his army to its fate. Our force was now sufficient for a regular siege of the fort which was accordingly invested on all sides, and trenches were pushed forward against its north-east corner. By the 21st January the breaches were declared practicable, and preparations for an assault were made. But the unceasing cannonade on the small area of the fort had shaken the morale of the garrison, and Mulraj was offered by his men the choice of cutting his way out or yielding. He chose the latter course, and on the 22nd the Diwan surrendered at discretion and the garrison laid down their arms. Thus Whish's force was set free to march to the assistance of the army of the Punjab at a time when its assistance was most urgently required, as we shall see from the operations on the Chenab to which I now propose to turn.

Whilst the army of the Punjab was assembling, a brigade of horse under Cureton and one of foot under Colin Campbell were sent forward to Gujranwala between the Ravi and Chenab as an outpost to protect the mobilization and prevent the Sikhs advancing on Lahore. About the 3rd November Wheeler's brigade arrived from the Jullundur Doab and Godby's from Ferozepore. On 20th November Gough, having collected all his available forces, advanced to Noiwalla, 13 miles from the Chenab. His army consisted of about 12,500 infantry, of

whom $\frac{1}{4}$ were British,* 3,500 cavalry, in which were three British regiments, the 3rd Dragoons, 9th Lancers, and 14th Light Dragoons and a numerous artillery.

The main body of the Khalsa army was assembled on the right bank of the Chenab opposite Ram Nagar (where there was a ford), with a detachment on the east side of the river. The position of the latter was admirably chosen. From it the Sikh leader, who was none other than Sher Singh, so lately our colleague in the first siege of Multan, could interrupt the movements of Golab Singh of Kashmir, who might be trusted to throw his weight on the winning side; he covered his communications with his father, Chattar Singh (who was till consolidating his rising in the Derajat), and he could draw supplies from the rich districts of the Upper Chenab. Such a position was worth fighting for. But Sher Singh, on the approach of Lord Gough with a reconnoitring force, began to withdraw his detachments to the right bank of the river. This was just what Gough should have wished. To clear the left bank of the river was his first object, and the enemy was doing so of his own accord. Gough, however, saw an enemy before him retreating without a blow, and this was more than his fighting nature could stand. He placed himself, unknown to the majority of his staff, at the head of the advanced cavalry and horse artillery, and dashed at the Sikhs as they were making for the ford, leaving his main body without orders and without a head.

Those who know the rivers of the Punjab will recollect that the winter water-course is but a narrow thread winding through a maze of flood channels, sand heaps, steep banks, and quick-sands over a mile wide and confused with jungle and reeds. The right bank at Ram Nagar commands the left, and as our horse artillery pressed on in pursuit of the Sikhs, they came under fire of Sher Singh's heavy guns and of infantry concealed in the tangle of scrub. They had to retire, but the guns had become embedded in the heavy sand and were only extricated with extreme difficulty, while one had to be abandoned altogether. Several charges of cavalry were gallantly, but ineffectually, launched against the Sikh infantry, until at last Colonel Havelock, Commanding the 14th Light Dragoons, sought and obtained permission to charge a body of Sikh infantry who were pressing forward defiantly.

The 14th, supported by the 5th Light Cavalry, dashed forward, and drove back the advancing enemy, but not content with this success, and seeing other Sikhs in the river-bed, Havelock pursued his charge further than was intended, got entangled in the broken ground and disappeared. When the regiment rallied and returned, it was with diminished numbers and without their colonel. Brigadier Cureton, who commanded the brigade and was considered the best cavalry leader in our service, dashing forward to try and stop this reckless charge, was struck by a musket ball in the chest and fell dead from his horse.

Such was the combat of Ram Nagar, an affair entailing considerable and unfortunately useless loss of valuable lives. The object of the reconnaissance had been obtained by the mere display of our troops, the

* These were the 24th, 29th, 61st and 2nd Europeans, now 2nd Royal Munster Fusiliers.

subsequent fighting gained us nothing, and rather encouraged the enemy who, in this their first encounter with us, did not have the worst of it.

After this Gough remained for a week at Ram Nagar, awaiting the arrival of the heavy artillery, always a drag on our operations. On the 2nd of December a movement was commenced for crossing the Chenab in the face of the enemy and driving him from his position. To do this at Ram Nagar—where the ford was covered by the main Sikh army with a powerful artillery, was obviously impossible—and Gough determined to detach a force to make the passage of the river higher up and turn the Sikh flank. Between Ram Nagar and Wazirabad are several fords, but strange to say, none of them had been properly examined or reported on before the movement now decided on had been undertaken. They were, it is true, strictly watched by the enemy, but this should not have prevented them being thoroughly explored by competent officers.

The detached force was placed under Sir J. Thackwell, with about 8,000 men and 6 batteries of artillery. The infantry was commanded by Brigadier-General Sir Colin Campbell. They were to start at 1 in the morning so as to reach the ford of Ranikan, about 13 miles distant, by daylight and seize it by surprise. But night-marches do not seem to have been studied in those days, the infantry lost their way in the huge camp, there was noise and confusion, and in the end the force arrived at Ranikan at 11 instead of 7 A.M. The ford was found to be impracticable for guns and held in some force. Thackwell decided to abandon the crossing, but to try again 12 miles higher up at Wazirabad against the advice of Campbell who was for returning. Fortunately he had with him a man of energy and forethought. John Nicholson had joined him with a band of Pathan horse after an adventurous journey through the enemy's country from near Peshawar, and he, riding ahead at full speed, secured all the boats at Wazirabad and staked out the ford before the army arrived about 6 in the evening. The Sikhs were slack in guarding the ford at night, and by morning one brigade had crossed and the other got half way across the river. Their plight was not an enviable one. Wet to the skin, without food or shelter, worn out by a march of 25 miles, and unable to light fires, they had to pass a cold Punjab night as best they could. Truly, in those days but little forethought was exercised or provision made for the health and comfort of our valuable troops.

It was 2 o'clock next day before the force was ready to march. Nothing was known of the country or the enemy, but Thackwell decided to move towards Sher Singh and marched 12 miles down the river, when he received a message from Gough congratulating him on his success and urging him to attack the Sikhs next day in flank, while he himself assailed them in front.

Next day the order was countermanded. Thackwell, after marching on 6 miles, was forbidden to attack until Godby's brigade joined him by the Ghari ford; he therefore inclined towards the river, detached troops to hold the exit of the ford, and halted in front of a large village, called Saidulapur, with three other villages not far in front of him.

H

Meanwhile Gough had been endeavouring to divert the Sikh commander's attention by a heavy, but from the long range over the river, useless fire of artillery. Sher Singh was not, however, deceived, and with a skill, worthy of a great commander, he moved off to attack Thackwell while he was out of reach of support from Gough. But having commenced this movement with his whole force, he grew anxious lest Gough should advance and fall on his rear, he therefore left the larger part of his army to amuse our Commander-in-Chief and sent 10,000 men to attack Thackwell.

While that commander was resting in front of Saidulapur, and the men were preparing their dinners, suddenly a shell burst over their heads, and round shot began to bowl along amongst them. It was a complete surprise, but order was quickly formed and the army deployed, and withdrew about 200 yards to give as much open ground in front as possible. Our artillery soon began to reply to that of the enemy which was well posted in a strong position among the three villages in our front. For at least four hours the artillery duel was kept up, until when it was near sunset the enemy, who had vainly tried to get round our flanks on both sides, gave up the attempt and withdrew his forces. At this critical moment Thackwell got a message from Gough permitting him to act on his discretion and attack if he wished. He hesitated, consulted, and finally did nothing, considering that the hour was too late for effective pursuit.

Next day, when Gough sent out a cavalry reconnaissance, it was found that Sher Singh and his army—horse, foot, and artillery—had disappeared with characteristic celerity and were far on their way to the Jhelum.

While Gough, restrained by the Governor General's orders, is kicking his heels at the camp, he now formed at Helah—let us pause for a moment and consider what had been the results of the campaign up to this moment and how they had been brought about.

Lord Gough's strategy up to this point has been severely criticised by the most able writers on Indian warfare and has found but one defender in the interesting book lately published by his relative, General Sir C. Gough, V.C.

The objections to his movements are several and may be summed up shortly as follows :—

1st.—He uselessly sacrificed lives and guns at the affair of Ram Nagar in insisting on bringing the Sikhs to action when they were already doing what he wanted in retiring over the river. The reply given to this is that Gough was reconnoitring the enemy and obtaining information, that the gun sticking fast was an unlucky accident, and Havelock's charge due to headlong valour. Perhaps we may concede the latter points, though it is somewhat difficult to understand how, under the eyes of the Commander-in-Chief, both guns and cavalry should have been permitted to commit themselves to impossible ground. But in attempting to fight infantry on the broken ground of a river-bed with only cavalry and artillery, Gough seems undoubtedly imprudent, and in fact the only result of his attack was to bring a much larger body

of Sikhs over to the left bank than before it began, and to give them the encouragement of a captured gun, and a first success.

2nd.—The Sikhs having withdrawn over the Chenab to the strong but inhospitable country between it and the Jhelum, a really great commander would, it is said, have allowed them to remain there eating out their hearts and the country, until Multan should fall and the army be reinforced to overwhelming strength. Sir H. Durand in the able but bitter article on the war, which he contributed to the *Calcutta Review*, points out that Gough's true course was marked out by the manifest object of the enemy. To remain in observation on the left bank of the Chenab, to regard himself as covering the siege of Multan and holding Sher Singh in check till that place fell, to cover Lahore and cut off all supplies from the districts on the left bank, and jealously to watch the enemy's movements whether to north or the south. Such should have been Lord Gough's objects.

To this it is replied that in his position Sher Singh could accumulate recruits and supplies; his proximity to Lahore encouraged the disaffected Sirdars in our rear, and the Sikhs could be held more easily in check on the Jhelum in case they should move towards Multan. So that the ejection of Sher Singh from his quarters on the Chenab was necessary.

I cannot think these replies conclusive. Sher Singh did obtain supplies and recruits in plenty on the Jhelum. Our army was further from Lahore with a difficult river at its back when it crossed the Chenab and had less influence on any events that might happen in its rear, and Gough's manœuvres on the Chenab in no way prevented Sher Singh from retreating on Multan had he been so minded. In fact, they rather tended to give him an impetus that way, and he subsequently showed that he had the legs of our army.

3rd.—The crossing of the Chenab as carried out was a dangerous move. Of this, I think there can be no doubt. Thackwell was entirely *en l'air* until he reached the Ghari ford. When he got to Saidulapur, there should have been a brigade ready to join him as was apparently intended, but not carried out. Had Sher Singh adhered to his original inspiration, left a small force to deny the ford of Ram Nagar to Gough and fallen in superior numbers on Thackwell, he would have beaten us in detail and achieved a brilliant stroke of strategy.

Thackwell cannot be acquitted of carelessness in not reconnoitring his front and allowing himself to be surprised at Saidulapur. Had he done so and found the enemy approaching, he would have taken up the much stronger position of the three villages in front which he conceded to the enemy, and then aware of their numbers and seeing them wavering in the open, he need not have hesitated to turn their retreat into a route by the counter-attack which some of his juniors in vain urged upon him.

The passage of the Chenab was followed by a long delay, due, it appears, to the orders of Lord Dalhousie, that nothing should be risked till the fall of Multan enabled the field army to be reinforced. But in a month's time Attock, till then bravely held by Lieutenant

Herbert with a few Mussalman troops, fell into the hands of Chhattar Singh, who, reinforced by an Afghan contingent, was now free to join his son on the Jhelum. Lord Dalhousie now pressed Gough to advance if he thought himself in a condition to strike a blow with success. Sir H. Lawrence, who had joined Gough's staff, was equally urgent. So on the 12th January 1849 Gough began his advance and moved to Dinghi lying nearly due east of the position which Sher Singh had taken up and entrenched between Chillianwala and the Jhelum.

The British army was now formed in the manner indicated on the attached table (A), and consisted of about 12,000 infantry and 3,000 cavalry, with nine light and two heavy batteries of artillery. The Sikh forces are variously estimated at from 20,000 to 25,000, with a strong artillery force.

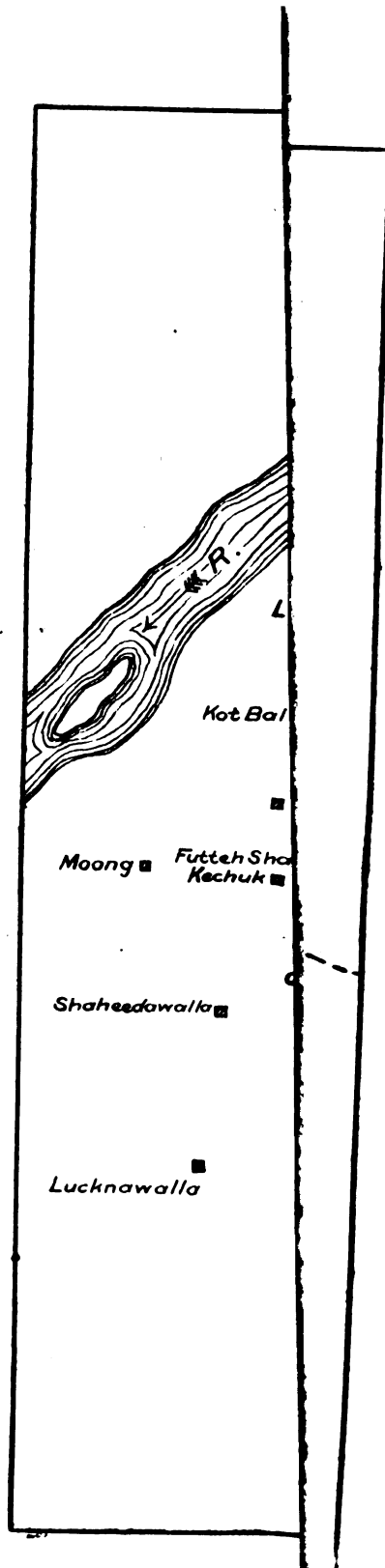
The enemy's entrenched position ran nearly parallel to the Jhelum from Rasul on a low range of hills to Mung, a village in the plain.

In front was a belt of thick jungle through which a fair road led straight on Rasul.

At Dinghi, Gough called a council of war, at which Sir H. Lawrence was present, and it seems that the plan of battle adopted was due to his advice. It was based on the idea that the long Sikh line must be thin and weak, that an attack on their left at Rasul in echelon would double up their line and drive them southwards into the fork of the rivers, separating them from their line of retreat and reinforcement. It was a masterly plan in the style of the great Frederic and admirably suited to the circumstances. It was adopted by the Commander-in-Chief who proposed to march next day to some convenient point, camp there and carry out the plan the following day.

Accordingly, on the 13th January, the army was early in motion, formed in line of contiguous columns, and reached the village of Chota Umrao on the Rasul road. Here he halted for his engineers to reconnoitre. They reported the road to Rasul practicable, but soon after news came in that the Sikhs had a force about the village and mound of Chillianwala on our left flank. On this Gough made a move that vitiated all his plans. He deployed his whole force to the left, parallel to his line of march, and moved straight on Chillianwala, a very hazardous change, as it exposed his right to the very attack he had himself contemplated, had the enemy been active enough to seize the chance.

The Sikh force at Chillianwala was merely an outpost which fell back before our advance, and from the mound a good view of their position was obtained. It could be seen that their line was a long one, with a great interval between their centre and right, which was refused, while the left rested on the height at Rasul. Our deployed line was little longer than the Sikh centre to which it was opposite. It was now 2 o'clock and Lord Gough did not intend to fight that day. Orders were being issued for the formation of a camp, when the enemy's round shot began to fall thick and fast from the dense jungle, in our front. It was a trap of Sher Singh's who, knowing the impetuosity of the British General, determined to bring him to action at once. The draw



was successful. Gough directed his artillery to reply, and then, as they made no impression on the enemy's guns, concealed in the thick scrub, he ordered a general advance of the infantry.

The battle which ensued is a difficult one to follow. Our whole force was at once swallowed up in the jungle and became so disjointed in the thick and pathless bushes that no one knew the fate of his neighbour. Let us first follow the left (Campbell's) division. The right brigade under Pennycruick emerged from the jungle 300 yards from the enemy's position, on rising ground with pools of water in front and strengthened by many guns. They charged under a storm of shot and shell, but the distance was too great and the pace slackened at the critical moment. The 24th British, nearly 1,100 strong, reached the enemy's guns and spiked some of them, but the brigade was unsupported, the enemy's cavalry rushed upon them and completed the disorder into which they had fallen. The whole brigade broke and fled, pursued by the Sikh sabres almost up to their original position. Meanwhile the left brigade under Hoggan, to which Campbell had attached himself, had inclined to their left, as Pennycruick had to his right. Finding himself overlapping the Sikh centre, Campbell brought up his left and tried to take the enemy in flank. They were quick to face him, and showed no sign of yielding. At the same time our cavalry under Thackwell on the left, aided by the horse artillery and a wandering field battery, endeavoured to hold the Sikh right wing fast. A gallant charge by Captain Unett of the 3rd Dragoons had some effect, but neither horse nor artillery could prevent some of the Sikh battalions from wheeling to their left and attacking Campbell in rear. The courage and discipline of the 61st and their native comrades were equal even to this emergency. Repulsing every attack, they compelled the Sikhs to give ground, and when night fell had established themselves across the Sikh centre and captured eleven guns.

Meanwhile affairs had not gone well on our right. Gilbert's division found the same difficulties in their advance through the jungle and the same stern resistance from Sher Singh's left centre. The 56th Native Infantry in the centre, after a gallant attack and a loss of eight officers and 322 men, were forced back. A gap was thus formed, of which the Sikhs availed themselves and separated the two brigades, who thus found themselves, like Hoggan on the left, attacked in front flanks and rear. They had one advantage in the presence of Dawes' battery, which at this crisis rendered splendid service. "In spite of jungle and every difficulty whenever in a moment of peril he was most needed, Dawes was sure to be at hand; his fire boxed the compass before evening, and Gilbert felt and handsomely acknowledged the merit and valour of Dawes and his gunners."

But a still more serious disaster threatened Gilbert's right. He was supposed to be secure on that flank by the presence of Pope's strong cavalry brigade consisting of the 9th Lancers, 14th Light Dragoons, and the 1st and 6th Native Cavalry, supported by Christie's 10 horse artillery guns. By some error in the advance the cavalry lost direction and got in front of and masked the guns. They were also moving in one line without supports or any point to rally on. Suddenly a body

of the enemy's horsemen burst from the jungle, wounded Pope severely (he was already in feeble health) and checked the advance of the brigade, which halted waiting for orders. None came, and on the attack of another body of horsemen, it is said that some one in the ranks of the 14th called out "threes about." The regiment complied and swept back over the guns, and gunners carrying the rest of the brigade with them. The horse artillery taken completely by surprise were cut up and six guns captured by the pursuing Sikhs. They would even have reached the Head Quarters Staff but for the gallantry of the 9th Lancers, who rallied behind the guns and drove back the enemy's horsemen. The rest of the cavalry were, with difficulty, rallied far to the rear.

This misfortune completely exposed Gilbert's right brigade which became surrounded by a large body of Sikhs. Sir W. Gilbert called on the 2nd Europeans to face about and charge. This they did with such vigour that the Sikhs fighting manfully were swept away, and the brigade was again able to turn to the more serious work in front.

Penny's reserve brigade had been ordered forward to take the place of Pennycruick on the left centre, but losing its way in the jungle, it worked off to the right and came in very opportunely on Godby's flank. He too was attacked in front and right rear, but with the assistance of the ubiquitous Dawes, he drove off the enemy and turned to Godby's assistance.

Mountain's brigade had held steadily to its ground in the centre and at last joined hands with Campbell. The artillery was now brought up and the Sikhs' centre completely broken.

The Sikh left posted on the Rasul heights had, during the whole course of the battle, remained immovable, held in check by a detachment of Pope's cavalry and some guns under Colonel Lane. Neither the Sikh left wing nor Lane's detachment took any active part in the contest.

As the evening closed in, our brave and steadfast infantry, wearing the enemy down at all points at which they were in contact, communicated their isolated successes to each other by the cheers with which they accompanied their final charges, and these borne on the breeze above the rattle of musketry to the anxious ears of the Commander-in-Chief were the first announcement that the day, if not won, was at least saved. There was still time to secure the victory. Thackwell's cavalry on the left was almost intact, and the right brigade had reformed and must have been burning to retrieve its lost honour. "We feel convinced," writes Durand, "that had Lord Gough ridden up at that moment to the 14th Light Dragoons and bid them retrieve the lost guns and strike for the bright fame of their peninsular honour, they would have swept on like a whirlwind and dashed upon the confused retiring masses of the enemy. It would have saved many a bitter pang, many a reproach, have prevented the withdrawal of the infantry from the ground so hardly won, and all the guns taken from the Sikhs and all the wounded of whom we had many would have been saved.

Indeed, some such movement was urgently needed. Night was closing in, our troops stood on the hard-won field cold, hungry, and exhausted, the ground around them strewn with wounded and with the

dearly-bought trophies of the fight. The question of bivouacing on the ground or retiring to Chillianwala was debated amongst the leaders, and Gough himself said he would be d—d if he moved till the wounded were safe. The more cautious counsel of Campbell, however, prevailed, and the whole line withdrew to Chillianwala for the night, during which the Sikhs hearing of our retirement returned to the field, slaughtered all the wounded and carried off all their guns and six of ours.

Thus, in doubt, anxiety, and shaken confidence, ended the hard-fought battle. The British army had lost in killed and wounded 89 officers, 2,357 men, and left on the field many standards, six guns and all their dead. Thirteen officers of the 24th Regiment were laid out next day in their mess tent.

The news of the battle spread quickly through India and to England and excited grief and astonishment in the public mind. Indignation ran high against Lord Gough whose "Tipperary Tactics" in precipitating the battle were freely denounced, and his supersession by Sir C. Napier was decided upon. Fortunately, before this could take effect, Gough completely and triumphantly re-established his fame.

The errors of the day may be very briefly summed up, and in doing so, I follow the views of Durand and Malleson, whose able criticisms can hardly be refuted.

The great mistake was the departure from the plan originally decided on. When the Sikhs were observed on the Chillianwala mound, a flank detachment should have dislodged them, when the army could have encamped for the night within striking distance of the enemy, who were known not to be night fighters. The project of attacking their left and rolling it up southwards could then, as far as human foresight can tell, have been easily executed.

As it was, when the whole army was deployed to its left, Gough, instead of hurling his line blindly against the enemy's centre and exposing both his flanks to their overlapping wings, should have taken advantage of the gap between the Sikh right and centre, thrust his troops into this gap and, severing the two wings, have rolled them up in opposite directions. It cannot be said that the actual attack, without adequate artillery preparation, without plan, without knowledge of the ground, showed very great tactical skill. British Generals may dare and risk much in reliance on the indomitable pluck and steadfastness of British officers and British bayonets. The dauntless valour of the men rectifies the errors of its commander and carries them through what would otherwise be inevitable defeat and disgrace at the cost of many a brave life. It may well be said of Chillianwala, as Napoleon always asserted of Waterloo, that at one period the British were beaten only they did not know it.

In justice to Lord Gough, however, it is only fair to say that his severest critics admit that his plans were good if he had adhered to them and confined himself to superintending their execution instead of entering himself into the fight and moving about the field. Even so, however, his presence was "always good for a cheer."

After this, the British force encamped at Chillianwala, while the Sikhs re-occupied Rasul. In this position they awaited—the former the fall of Multan, the latter the arrival of Chattar Singh and the Afghans. When he arrived on the 16th January, the Sikh army was reinforced to some 34,000 fighting men. They made many efforts to tempt Gough to another action, but he adhered sternly to his determination not to fight again till the arrival of General Whish, and the Sikhs never ventured on an actual attack. At last their supplies ran short and a move became imperative. On the 13th February, with much skill and secrecy, they marched round Gough's flank and moved on Wazirabad, evidently intending to make a bid for Lahore. They were just too late, for General Whish coming up by forced marches with three brigades from Multan, which had fallen, as we know, on the 22nd February, had just time to detach a force from Ram Nagar (where he had arrived) to guard the Chenab fords.

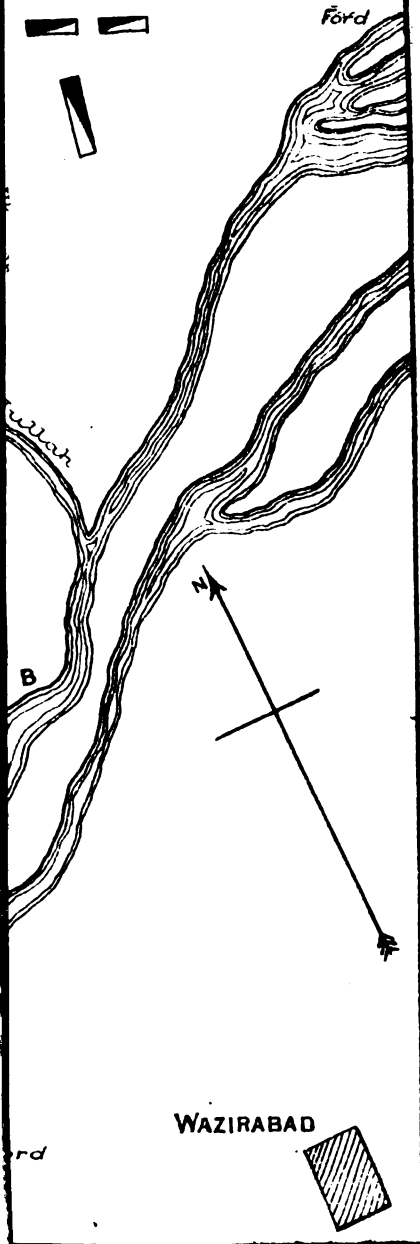
On the 15th Gough also broke up his camp and withdrew to Lasuri to secure his junction with Whish. Between the 17th and 20th the Multan brigades joined him, and on the latter day he marched in battle array to Shadiwal within striking distance of the Sikh position in front of Gujerat. He had now all the troops he could expect, and especially a preponderance in artillery which he had never before attained in his battles against his redoubtable foe. He determined on this occasion to make the most of this advantage.

The Sikh position lay in a rough crescent on the open plain, south of Gujerat. It was traversed by two nullahs parallel to each other and at right angles to their general line, but presenting no serious obstacle except that on their extreme right, which was refused, the Dwara afforded them some cover. In front were two villages, Kalra and Chota Kalra, both of which were occupied and fortified with the Sikh's usual skill. On right and left of the nullahs were extended their numerous cavalry.

The British army, now amounting to about 20,000, with 96 guns, was drawn up opposite the Sikhs as shown on table B. The morning of the 21st February broke in splendour over the open fields of young corn which lay between the opposing armies, while beyond in the distance the snow-clad mountains of Kashmir shot the irglittering peaks into the cloudless blue, forming a splendid back ground to the long array of motionless Sikhs. Gough's orders were to advance along the Dwara nullah, on the right and left of which were extended the two wings of the army, each to conform to the centre, where 18 heavy guns, drawn by elephants, formed a conspicuous point of direction. At 7-30 A.M. the line was in motion. As it advanced, the Sikh guns opened fire and disclosed their position. The line was halted and the artillery, covered by skirmishers, advanced to effective range, the horse artillery dashing to the front on both flanks with splendid daring. By 9 A.M. the whole line of our guns was playing on the Sikh masses with such effect that the enemy described their situation afterwards "as if in hell." It was too much; and after 2½ hours the Sikh line fell back behind the villages, which they still held in strength. Our right was now ordered to storm them which they did, led by Gilbert and Whish with the utmost gallantry and in spite of a determined resistance. It was here that most of our losses occurred.

BATTLE OF GUJERAT, Feb. 21st, 1849.

1 Inch = 2000 Yards.



with
range
o the
never
filade,
. An
eated
artil-
imself

n our
note
right
bold
horse
their
Camp-
emy's
an to
at the
ry, in
s now
heavy
mpbell
helum.
d had
hope
operly

ursuit.
tents,
is put
rider
ursuit.
of his
g, but
Sikh

ccess-
win a
done
n been
tillery,
or the

ft and
sult, a
h right
and in
tan the

1

After
 Sikhs re-
 the fall of
 Afghans.
 reinforced
 to tempt
 mination
 Sikhs nev
 short and
 much skill
 on Wazir
 were just
 with three
 22nd Fe
 (where he

On the
 Lasuri to
 the Multa
 battle ar
 in front of
 especially
 attained
 this occa

The
 of Gujara
 at right
 except th
 them so
 both of v
 right and

The
 was dra
 of the
 corn whi
 tance th
 into the
 array of
 Dwara n
 of the ar
 by eleph
 the line
 disclose
 by skirn
 to the fr
 line of c
 the ener
 too muc
 which t
 them w
 try and
 our loss

On our left Campbell and Dundas had advanced in alignment with the right in columns at deploying distance. On arriving within range Campbell made the men lie down and sent his artillery again to the front. Under their fire he slowly moved forward, lying down whenever he halted, till at last his guns took the bend of the Dwara in enfilade, and Campbell occupied the position without an infantry shot. An effort to turn Campbell's flank by the Afghan cavalry was defeated by a splendid charge of the Scind horse, supported by the horse artillery and the 9th Lancers, and enabled Thackwell to place himself beyond the enemy's sight.

But this forward movement of Campbell had left a large gap in our centre. The Sikhs, driven back, but not disordered, were quick to note it and skilfully endeavoured to turn it to account. Reforming their right division, they launched it on the gap as a forlorn hope. It was a bold bid for victory and was not far from success, for two troops of horse artillery sent to fill up the gap were found to have expended their ammunition, and their silence only encouraged the Sikhs. But Campbell noted the danger, and turning all his available guns on the enemy's masses with great promptitude, and throwing back his right, began to take them in flank with a murderous fire. They recognized that the attempt was impossible and drew back, covered by their cavalry, in good order. It was time they should, for the British right was now rapidly advancing and the Sikh left and centre falling back in heavy columns over the open country to the east of Gujerat, while Campbell and Thackwell had cut off their natural line of retreat on the Jhelum. "By 1 o'clock Gough had overthrown the Sikh army and had crowded it in heavy masses on a line of retreat which offered no hope of support, provision or escape for the disheartened soldiery if properly followed up."

Immediately cavalry and heavy artillery were launched in pursuit. For miles the country was strewn with guns, bullocks, wagons, tents, arms, and standards abandoned in hot haste, and only darkness put an end to the carnage. Next day Gilbert—known as the finest rider in India, with a large mixed force—was despatched in regular pursuit. Nothing in the campaign reflects more credit than the conduct of his rapid and successful march into which time prevents my entering, but which ended on the 14th of March in the surrender of the whole Sikh army and the restoration of all their prisoners.

The tactics at Gujerat require but few words of criticism. The successful use of Gough's preponderant artillery, which enabled him to win a decisive victory with but slight loss, shows what might have been done in the previous battles in this and the Sutlej Campaign, had that arm been given a proper chance. I venture to suggest that, as regards artillery, Gujerat affords as good an argument as any subsequent battle for the advantage of a powerful artillery in the future.

The Commander-in-Chief's plan of attacking first the Sikh left and centre and throwing it on the right was, it appears from the result, a mistake. It was Campbell's brilliant advance that threw the Sikh right into disorder and cut them from their natural line of retreat; and in this respect the battle, as it developed itself, worked out better than the original plan.

As regards the general strategy of the campaign, the Sikh leaders lost many chances and showed themselves incapable of real generalship. Sher Singh should have crushed Thackwell at Saidulapur; he should have overwhelmed Gough at the battle of Chillianwala by bringing up his two unused wings. He should have attacked him in his insecure position at Chillianwala as soon as reinforced by Chattar Singh, or have made his cleverly conceived move on Wazirabad for Lahore long before the Multan troops came up to stop his passage.

On the British side it appears that councils of war and consequent vacillation prevailed at Head Quarters throughout the campaign. "At the very outset orders and counter-orders succeeded each other so rapidly that a state of feverish excitement, prejudicial to the public interest, was unnecessarily kept up." Having decided, as we think, erroneously that the Chenab must be forced, he divided his force in the presence of an enemy superior to the whole of it. To force a strong river line, something must be risked, but not without every care and precaution, which in this case, as I have shown, were lacking. Lastly, comes the error of abandoning at Chillianwala the well-matured plan of attacking the enemy in flank for a blind and headlong dash at their centre. The lesson here learnt was a salutary one, and after it, Gough can be charged with no departure from a cautious and self-restrained policy. So cautious, in fact, that it might have landed him in fresh difficulties, had the Sikhs, after eluding him at Rasul, found themselves in a position to march straight on Lahore. There is no doubt that they always out-marched and frequently out-manœuvred us. This, of course, was in large measure due to their simple wants and hardy frames, but they still managed to take their guns and ammunition along with them, and must be allowed to have proved themselves active as well as brave.

Chillianwala, however, gave them a lesson not dissimilar to that of Ferozeshah. They recognised that the splendid bravery of British infantry was proof against the most unfavourable odds, and it was no doubt this feeling that prevented them from attacking Gough again or forcing the Chenab against Whish's feeble guards.

I need scarcely allude to the inevitable result of this severe campaign. The Sikhs had thrown down the gauntlet and staked their national independence on the result. That result could no longer be doubtful, and, with the approval of the Court of Directors and of the Home Government, Lord Dalhousie shortly afterwards decreed the annexation of the Punjab.

Sir, my task is now done, and I trust I have not tried your patience too far in the details of this glorious campaign. May I be permitted, in conclusion, to draw attention to the bravery and loyalty of our native army, whether from Bengal or Bombay, in sharing—shoulder to shoulder—the dangers, the hardships, and the losses of their British comrades, in which they were in no case behind hand; and, finally, to the advantage which Her Majesty's Indian empire has gained, not only in the inclusion within its borders of so fair a kingdom, but far more in the accession to her fighting strength of its brave and hardy inhabitants, who, loyally accepting the inevitable, have since shown in our hour of greatest need,

as well as in many a hard-fought field besides that our quarrels have been forgotten, and that our former foes are now our staunchest friends and brothers.

DISCUSSION.

The Hon'ble Major-General Sir Edwin Collen said :—

LADIES AND GENTLEMEN,—

We are much indebted to Colonel Sinclair for the lecture he has just delivered. He has given us a clear and succinct account of the 2nd Sikh War, and even without the criticisms he has placed before us, we are enabled to judge for ourselves of the merits, or demerits, of the strategical and tactical dispositions which were made.

If I may venture in a few words to sum up the lessons we may learn, it seems to me that they are : the importance of reconnaissance, the necessity for having clearly defined aims, the advantage of attacking an enemy on the flank which will throw him off his proper line of retreat, and the immense advantage of preparing for the attack by artillery fire, so long as you are certain that such preparation will not lead to a mere retirement of the enemy.

I was glad to hear, in the closing words of the lecture, such an eloquent tribute paid, not only to the British and Native troops engaged in this hard-fought campaign, but to the enemy of those days. Whatever error may have been committed by the gallant old warrior, Lord Gough, they were atoned for, to a great extent, by the victory of Gujerat, and by the splendid cavalry pursuit under Gilbert. The results of the campaign at least gave us the finest province of the Empire, and gathered to the standards of the Queen the finest martial native race under the sway of our beloved Sovereign.

I have more than once expressed the opinion that few things are more important to soldiers in India than the study of Military History and especially of Indian Military History.

It is no light task to compress into a small compass the results of study, and we must indeed be grateful to those who help us in this way. Colonel Sinclair has done this for us in his accounts of the 1st and 2nd Sikh Wars, and the United Service Institution is much indebted to him.

I am sure that I may also convey to him your cordial thanks for his excellent lecture.

The proceedings concluded with a vote of thanks to the Chair.

Army of the Punjab, 1848. **Table A.**

Cavalry Division, Thackwell).	Cureton (afterwards Thackwell).	{ 1st Brigade, White 2nd Brigade, Pope	...	{ British, 3rd and 14th Light Dragoons. ... Native, 5th and 8th Light Cavalry. British, 9th Lancers. ... 1st and 6th Light Cavalry.
		
			1st Division, Whish before Multan.	
Infantry	... 2nd Division, Gilbert	{ 1st Brigade, Mountain 2nd Brigade, Godby	...	{ British, 29th Foot. ... Native, 30th and 56th Native Infantry. British, 2nd European Light Infantry. ... Native, 31st and 70th Native Infantry.
			...	{ British, 24th Foot. ... Native, 25th and 45th Native Infantry.
			3rd Division, Thackwell (afterwards Campbell).	{ 1st Brigade, Pennycruick 2nd Brigade, Hoggan 3rd Brigade, Penny	{ British, 61st Foot. ... Native, 36th and 46th Native Infantry. ... Native, 15th, 20th and 69th Native Infantry.
Artillery, Tennant	...	{ Horse Artillery, 6 Troops, Huthwaite. Field Artillery, 3 Batteries, Dawes, Kinleside and Austin. Heavy Artillery, 2 Batteries, Horsford.	...	...
		
		

Table B.

*Army of the Punjab at Gujerat.*Cavalry Division as before, *plus* Scinde Horse and 4 Regiments, Irregulars.

	1st Brigade, Markham	...	{ British, 32nd Foot Native, 51st and 72nd Native Infantry.
	2nd Brigade, Hervey	...	{ British, 10th Foot. Native, 8th and 52nd Native Infantry.
	3rd Brigade, Dundas (Bombay)	...	{ British, 60th Rifles. Native, 3rd Native Infantry, Bombay Fusiliers and 19th Native Infantry.
1st Infantry Division, Whish	...	...	...
2nd Infantry Division, Gilbert	{ 1st Brigade, Mountain and Brigade, Penny	{	{ 29th Foot, 30th and 56th Native Infantry. 2nd European Regiment, 31st and 70th Native Infantry.
3rd Infantry Division, Campbell	{ 1st Brigade, McLeod 2nd Brigade, Hoggan 3rd Brigade, Carnegie	{	{ 61st Foot, 36th and 46th Native Infantry. 53rd Foot, 15th and 20th Native Infantry. 24th and 25th Native Infantry.
Artillery—Tennant, 8 Horse Artillery troops, 5 Field Batteries, 18 heavy guns. 69th Native Infantry.			With the baggage, 5th and 6th Light Cavalry, 45th and

THE TACTICAL PRINCIPLES AND DETAILS BEST SUITED TO WARFARE ON THE FRONTIERS OF INDIA.

BY LIEUTENANT-COLONEL H. H. HART, R.E.

Motto :—"SI VIS PACEM, PARA BELLUM."

INTRODUCTION.

Before we can profitably consider "The Tactical Principles and Details best suited to Warfare on the Frontiers of India," it is necessary to deal with certain other details, and acquire a thorough knowledge of the peculiar nature of the theatre of operations.

The Indian Frontier is of such vast extent that we must be prepared for every condition of country and climate, and for a savage enemy whose tactics and weapons vary considerably. For example, the theatre of operations, on the North and North-West Frontiers, embraces hills and mountains more or less precipitous, sometimes wooded, and sometimes bare. The principal mountain streams form valleys, which vary in width, are undulating or covered with terraced fields, with here and there some topographical feature of great tactical importance, and the valley is studded with fortified villages. These villages are extremely strong against the attack of hostile neighbours, but they are nearly always abandoned on our advance, probably because the enemy is fully aware that they would become mere shell traps, and also because there is no provision made for retreat. In connection with the main valley are ravines or nullahs that are usually narrow and steep. The rivers sometimes offer serious obstacles, and have to be bridged, but the streams require but little skill to make them passable. Except the great trade routes, there are no roads, but there are numerous tracks that are readily made passable for mules and even for camels. In the valleys, the tracks follow more or less the course of the streams and there are lateral communications that connect the valleys, but these are usually steep and cross more or less difficult passes that require much labour before the baggage animals can pass over them. Sometimes our line of operations is up the valleys, sometimes across them. In Baluchistan there are extensive undulating plains that need only a passing reference, because the tribesmen understand their peculiar warfare too well to fight at a disadvantage on ground where the effects of our guns and cavalry would tell in our favour.

On the East and North-East Frontiers, we have almost impenetrable forests, dense tropical jungles, and mighty rivers; and often in addition, hills or mountains, high grass jungles, and swampy flats.

Having briefly described the topography of the Frontiers, it is necessary to give prominence to the well known fact that there is really only one great principle to be observed in tactics—no matter what the country or who the enemy may be, civilized or uncivilized—namely, to be the strongest at the decisive point. But, the manner of being strongest requires a careful consideration of details, which depend not only upon the means available, but also upon the nature of the country, its inhabitants, and the weapons in use, and these vary from magazine rifles to bows and arrows.

An endeavour will now be made to suggest tactical details suitable for warfare under the conditions that have been described, so as to ensure, as far as possible, under all circumstances, at all times, and at all places, being strong at the point of collision in the essentially guerilla warfare that we are for ever waging with the wild tribes of our Indian Frontiers.

1. General Remarks.

From time immemorial, the hill tribes on the North-West Frontier have raided the adjacent plains, which now form part of our territory. On this account punitive expeditions, on a small or large scale, have been forced upon the Indian Government. Acts of treachery and murder, as at Manipur and Maizar, have resulted in expeditions.

If we now consider the North-East Frontier, there is the comparatively recent annexation of Upper Burma, but here the cause of war must be sought in European complications, rather than in any quarrel with the Burmese. There was practically no resistance at the time, but the absorption of this extensive territory was immediately followed by what was known as the dacoit war, which lasted for some years before the country was completely pacified. The cause of this war was the disorder resulting from the collapse of the native administration, which let loose bands of freebooters, called dacoits. The capture of Mandalay and the deportation of the King ended the regular war. In the trying war that followed, the objective was necessarily the hunting down of bands of dacoits. Even in civilized warfare, the occupation of the capital does not necessarily end the war. It did not, as we have seen, in Burma; and in other frontier wars, there was no capital.

Sometimes the overthrow of some leading man is a sufficient objective—Umra Khan of Jhandol, for example; but in this case the relief of Chitral, 1895, was the first objective.

Generally the villages and crops are the only tangible objective, because the tribesmen have no organised army to deal with, or government to coerce.

The tribesmen may concentrate, as at Dargai, in the Tirah Expedition, 1897, to oppose the invasion of their territory. In this case, the primary objective is to inflict a crushing defeat upon them, and then follows the usual guerilla warfare.

The gathering of tribesmen having been dispersed, the next objective is the occupation of their territory. If this is not sufficient, they must

be brought to terms by the demolition of their fortified villages, the seizure of their granaries, and the destruction of their crops.

In Infantry Drill it is stated that "one of the so-called secrets of success lies in obtaining accurate and early information of the enemy's movements, so as to enable a successful forecast to be made of his intentions. Without such information a commander is unable to decide in what manner his force should be utilized so as to obtain the best results."

When a campaign is contemplated, the Intelligence Branch prepare for handy reference such information as they may have collected regarding the particular tribe or tribes concerned, the number and the quality of their fighting men, their tactics, weapons, organisation, and so forth. Maps are also prepared from the information available.

Officers, well known as politicals, are attached to every force. Having spent their lives on the frontier, they are intimately acquainted with the people, and have a thorough knowledge of the language. These officers, through the medium of spies, furnish much information, but they have often been deceived, and therefore a General must not too readily accept all their statements.

Much information can often be gathered from prisoners and from refugees.

"Infantry Drill" contains but little information on the subject of reconnaissance, because it is impossible to give minute instructions for guidance when so much depends upon circumstances.

Before the attacks on the Sampagha and Arhanga Passes, reconnaissances were made. The maps were only approximately correct, as the country had not previously been visited by any European.

The position of the enemy's sangars, the direction and nature of the roads or paths leading towards the position, any obstacles such as deep nullahs, and any dominating heights to the right or left which would become points of vantage if taken by a flank attack, should be carefully noted.

The commander bases his plans of attack upon the information obtained.

The long line of communication through a mountainous or wooded country is much exposed to the desultory attacks of the tribesmen.

We will now consider the best way to ward off these attacks. As the army advances from the base, advanced bases are fixed at suitable places. When the line of communication is liable to be attacked by the tribesmen, fortified camps are arranged at convenient distances between the bases.

During the Tirah Expedition, the line of communication extended by road from the railway terminus at Khushalgarh to the base at Kohat, a distance of 32 miles; from Kohat to the advanced base at Shinauri, 41 miles, with fortified camps at Usterzai, Hangu, and Kai; and from Shinauri to Maidan, 35 miles, with fortified camps at Karappa and Mastura—total distance 108 miles. A General Officer Commanding, with staff, and three Section Commandants, were appointed for the

line of communication ; and a Base Commandant and staff at the base.

During the Chitral Expedition, 1895, the line of communication was under a Major-General, and there were four Section Commandants, whose responsibility extended from 42 to 58 miles.

The road between two posts is either piqueted during the day by troops sent out about half way from each post, or strong escorts are employed.

Sir William Lockhart's advance into Tirah by one line has been criticised, and some critics have maintained that it should have been entered by two lines.

Before the campaign, however, it was expected that our forces would be opposed by about 50,000 armed tribesmen.

The relief of Chitral in 1895 is a good illustration of a combined movement of two forces which started from two bases, about 200 miles apart. There was no inter-communication until they arrived almost simultaneously near Chitral.

It is a time-honoured principle that, for success in warfare with Asiatics, we should take the offensive with the utmost vigour, energy, and resolution ; and not slacken off until the enemy is crushed and sues for terms. When we stand upon the defensive, it will generally be found that we do so at a disadvantage.

2. *The tribesmen.*

As the consideration of the tactical principles and details of warfare on the frontiers of India depends, to a great extent, upon the enemy likely to be encountered, it is necessary to describe the traits, characteristics, etc., of the tribesmen.

The tribesmen of the North-East Frontier are generally indifferently armed and not so brave as those of the North-West and are rarely able to concentrate in large numbers. They take refuge in the jungle, bush, and forest, and carry on a protracted guerilla warfare, which is most trying to regular troops, who also suffer considerably from the unhealthy climate.

Turning to the tribesmen of the North-West Frontier, we find them warriors and accustomed to the use of arms of precision from their youth up, and most skilful in desultory or guerilla warfare.

They delight in the principle of the "Vendetta," believing in the law of retaliation—an eye for an eye, and a tooth for a tooth—and regarding murder as a justifiable pastime. They keep themselves in practice by firing at their nearest enemy, whenever he unwittingly exposes himself as a target. Quarrels and warfare with other tribes are also frequently taking place.

They equally delight in pillage, attacks on convoys with the hope of plunder, stalking sentries, or silently and stealthily creeping towards followers, ruthlessly cutting them up and gloating over it.

They excel in stratagems and ambushades, and revel in raids of burning, plundering, and lifting cattle ; are adepts at petty

skirmishes, but avoiding engagements with advanced-guards, they see their advantage in harassing and attacking rear-guards, rapidly grasping any situation when wavering or hesitation is shown by us, and speedily taking advantage of any mistakes which may be made.

Being unable to oppose us in the plains and valleys, they keep to the hills and high ground as much as possible.

They consider might as right, and possession as nine-tenths of the law. They are crafty, cunning, wary, deceitful, and treacherous.

Their treachery was well-illustrated in the Maizar outrage in the Tochi Valley on the 10th June 1897, when the Madda Khel sub-section of the Darwesh Khel Waziris fired on the escort which accompanied Mr. Gee, the Political Officer.

They are as suspicious of their own people as they are of us. They are fond of rupees and will sell provisions to us in the morning, but will join in an attack upon us in the afternoon, and "snipe" at us at night.

Self-reliant at all times, they rarely look to any leader for guidance and concerted action in the fight.

With an innate love of independence and individual freedom, they brook no rulers, and are disunited except before a common enemy.

They inherit quickness of hearing, and keenness of seeing. Their bravery is seen in their Ghazi rushes.

They are prone to attribute leniency and forbearance to weakness and timidity.

By training they are good horsemen, agile athletes, and fairly good marksmen, knowing well how to take full advantage of cover, and to add to it when it is insufficient.

They are excellent as scouts, and unrivalled as skirmishers.

Although they are addicted to torturing and killing the wounded, and mutilating the dead, it should be remembered that, towards the end of the expeditions in 1897, they showed signs of abandoning these savage practices.

They are notoriously irreligious and indifferent to the teachings of their religion. The almost total absence of mosques in Tirah and in the Bazar Valley is significant. They are, however, fanatical when fanned into flame by the Mullahs, and appear to believe any preposterous falsehoods told to them by their priests. The Amir of Afghanistan attributed all the border disturbances to the Hadda Mullah. In 1897, the Amir gave the following reply to the tribesmen, when they asked him for assistance:—"For the sake of a trifling gain, you prefer disorder and tumult. For your own selfish ends you wish the whole world to be desolate and ruined. From your ignorance, you do not see and know what would tend to your lasting benefit." The tribesmen have proved themselves, during negotiations, adepts at shuffling, prevarication and procrastination.

They have no base, lines of communication, organisation, commissariat, transport, artillery, commanders in any way corresponding to ours, and no government.

They require but little food; when this or the ammunition, which each man carries himself, is exhausted, they can keep the field no longer, and are generally compelled to fetch or to seek a fresh supply.

Concentrating with marvellous rapidity from all directions, they disperse and vanish on defeat, rendering pursuit a task well-nigh impossible for regular troops. When all is going well in the fight, they will hold together for the time and obey a temporary leader, but when matters are going hard against them, each man acts for himself, as he distrusts his fellow-tribesmen. There is, therefore, little cohesion in their ranks at any time.

Although the tribesmen have doubtless faults and failings, they have many good qualities and virtues and many friends among those who know them best. A Government Order, of the 7th October 1897, was issued, and speaks in the following terms of the Afridis:—"The Afridi soldiers in the service of the Government have given proofs of their loyalty, devotion, and courage, on many a hard-fought field, and the value of their services has been fully appreciated by the Government of India."

In their contempt for danger, their bravery, the small sangars they build up for their protection, their manliness, good-will, and freedom from all vindictiveness after a fair fight in which they have been beaten, we can learn much.

Sir William Lockhart says:—"The Afridis are a fine manly race, handsome and brave, without any trace of subservience or cringing, and take their defeat like men. They are very keen-sighted, and the best cragsmen I have ever seen. They never throw away a single shot. They are warlike but restless."

After the Tirah Campaign, they came forward in a friendly way to Sir William, who, instead of upbraiding them, turned to Colonel Warburton and said:—"Explain how pleased I am to see them and their Jirgahs, for they have fought like men. By these few words, the man who had just conquered their country became their friend. Sir William's tact, firmness, and kindness are qualities absolutely essential in dealing with the frontier men." (*Pioneer*.)

On the 1st September 1897, Balish Khel, a small isolated post, 3 miles from Sadda, in the Kurram Valley, was held by an Afridi Havildar and 20 men. They remained faithful, although asked to surrender, and successfully defended the post.

The tribesmen are a splendid fighting material. They are fairly well-armed now, and probably, try as we may to prevent it, will be better armed still in the future. Many of them are trained in our army. They are formidable as enemies, and few would venture to say what the result would be if they were led by Europeans against us—a contingency hardly yet contemplated by us.

They bravely fight for their independence, and will lay down their lives for their country, receiving no compensation whatever in gratuities; and no medals, decorations, and brevets, as we have had showered down upon us.

Some of them may be murderers like Cain, subtle like Jacob, but they are forgiving and generous like Esau. In one instance, a Subadar-Major paid up several thousand rupees from his savings to make up the fine imposed upon his clan.

Contrasted with their frugal fare, we have the disadvantage of being obliged to bring up large supplies, and can hardly fight without a daily ration of meat. Our advantages lie in discipline, training, weapons, organisation, able commanders, and the moral force of civilization.

We are still undecided as to the principal cause of the outbreak on the North-West Frontier in 1897, but when all things have been weighed in the balance, and faults recognized on our side, as well as on theirs, we can feel nothing but good-will towards our late enemies, whose greatest fault was their impudence in supposing that they could defeat the troops of the British Empire, and prevent an incursion into their country.

3. *Marches, Advanced and Rear Guards.*

Officers must be prepared to accept considerable responsibility, and to act up to the spirit rather than to the letter of the drill-books, which give instructions that are sufficiently elastic to meet all cases. If these instructions are only read intelligently, it will be found that there is ample latitude for the most enterprising officers, and that no officer's hands are tied.

Careful calculations of space and time are necessary during the march in the enemy's country beyond the frontier, but columns can rarely be calculated to march in any other formation than single file, and the length of a column becomes considerable when it is remembered that a pack-animal requires 4 yards. General instructions for marches are given in the drill-books; it is only necessary, therefore, to refer to a few points.

Cavalry is rarely able to cover the advance; this duty must, therefore, be performed by infantry. As reconnoitring can be but imperfectly carried out by the advanced-guard, the column is liable to sudden resistance in front and attacks on the flanks; consequently dispositions must be made to meet any attack that may be made.

Every effort must be made to prevent straggling and the lengthening out of the column, particularly when crossing a stream.

It is hardly necessary to state that, if the force is large, an early start should be made to enable it to reach the next camp before night-fall. Long marches should not be made when there is any probability of the rear-guard being benighted.

Each part of an advanced-guard should keep touch with the party behind. It is equally important that intervals should not be reduced.

An advanced-guard is always necessary to clear the way. Its strength, in mountainous or hilly country, will depend upon the amount of piqueting that will be required to guard the flanks of the line of march, and the opposition that is likely to be met with. Small parties of the tribesmen are easily brushed aside. If, however, the enemy is found occupying a position in great strength, the commander of the advanced-guard will act in accordance with his instructions, and at once inform the officer commanding the column.

An advanced-guard is composed of infantry and sometimes artillery, as many companies of sappers and miners as are available, and usually a regiment of pioneers. The artillery should be with the main guard, or near the head of the main column, with an escort of about a company of infantry, its mobility will enable it to come rapidly into action if required to shell villages or heights occupied by the enemy. When no serious opposition is expected on the march, the advanced-guard starts some hours before the main column in order to enable the sappers and miners and pioneers to improve the road. On arrival in camp, the road for the next day's march can sometimes be much improved for some distance. The main column very soon catches up the advanced-guard, and then maintains its interval.

The tribesmen on the North-West Frontier rarely oppose the advanced-guard. Some opposition was encountered by the 4th Brigade (Westmacott's) on the march from Bagh on the 7th December 1897 on arrival near Dwatoi, and by the 1st Brigade (Hart's) between Alachi and Karamna on the 25th December 1897. On the advance of General Elles from Shabkadr to Lakerai on the 15th September 1897 the advanced-guard met with some opposition. However, such opposition is immaterial, as the advanced-guard is able to act with boldness, knowing that reinforcements, if necessary, will soon arrive from the main column.

No clustering or massing is on any account to be allowed in the advanced-guard.

On receiving orders from the commander of the advanced-guard to piquet the flank or flanks, the battalion commander sends out flanking piquets, varying in strength from a non-commissioned officer and two or three men, to a company. In this way, the advanced-guard piquets all the prominent heights and knolls bordering on the line of march. These piquets soon learn the necessity for taking every precaution to avoid loss, usually sending a few skirmishers in advance, followed at some distance by the remainder. The actual strength of each must depend upon local circumstances. The piquets protect themselves by taking advantage of the ground and erecting sangars when stones are available. In the event of being attacked, they must rely greatly upon themselves, and only signal for assistance when absolutely necessary. If piquets are not visible from the line of march, connecting files or parties are necessary.

An enemy's attack on a flanking piquet rarely delays the march for long. In Tirah and the Bazar Valley no serious attack was made on a flanking piquet. It is difficult to make the column absolutely secure from the effects of the enemy's fire.

Flanking piquets remain in position to protect the main column during its march, and come in, as fast as possible, when no longer required for the protection of the rear-guard, and should then find their way back as opportunity offers to join their battalion, which is collecting between the rear-guard and main column.

If two brigades are making the same march on the same day, the leading brigade should piquet the heights for the march of both the brigades. By a misunderstanding, the leading 4th Brigade (Westmacott's) did not piquet the heights for the following 3rd Brigade (Kempster's) on the 11th December 1897 during the march down the Bara Valley from Shundana to Sher Khel. The heights had to be taken and piqueted by the 3rd Brigade, thereby greatly delaying its march. On the march from Sher Khel to Guli Khel on the 13th the 3rd Brigade piqueted the heights for the 4th Brigade. The main guard is usually disposed with infantry leading, followed by the companies of sappers and miners and pioneers, then the mountain battery with its infantry escort.

On arrival in camp, the Field Officer of the day, under the orders of the Officer Commanding the Advanced-guard, usually places the outlying piquets, which are generally relieved later in the day.

When the march is through rather open jungle or forest country, it may be possible to provide flanking detachments or piquets. The head of the van-guard, consisting of an officer and a few men, advances with the greatest circumspection, looking out for signs of the enemy, and endeavouring to discover ambuscades and concealed pit-falls on the track.

Now to turn to the North-East Frontier. The orders which Major Quentin issued to his native troops in East Africa should be strictly followed in the jungle:—"Bayonets will always be fixed on the march, and every man will carry two cartridges in his hand, ready to load his rifle at the shortest notice. When the enemy is met with, the party will face outwards mechanically to right and left, to guard against sudden attacks from either or both flanks, and under no circumstances turn all attention to one flank or to one point." A disaster occurred to a reconnoitring party of 48 men under the command of a Jemadar in July 1898 in East Africa by not carrying out these orders. The Jemadar was following up a small body of tribesmen on his right flank, but as his party advanced, they were suddenly rushed and surprised by a large body of natives who were lying in ambush on the left of a dense grass jungle. The Jemadar and 26 men were killed before they could fix bayonets or fire a shot. During a night march, the advanced-guard only requires a small interval between it and the main column. The column usually marches in single file, close touch being carefully kept throughout.

Fires can be lit at intervals when the enemy is not in great force, and the column is secure from attack by the flank piquets.

Owing to the impossibility of crossing the divisional troops and the whole of the 1st Brigade over the Sapri Pass during day-light on the 12th December 1897, Brigadier-General Hart ordered large fires to be

lit at intervals the whole way on the Bara side, and a large proportion of the troops and transport were passed along during the night. It was necessary not to delay, as the brigade was only rationed for a certain number of days. Brigadier-General Hart lit fires again on the night of the 25th—26th December during the march from Karamna to Burg in the Bazar Valley Expedition to enable the rear-guard to get into camp.

Night marches have often been made in the past, and will probably be more frequently undertaken in the future, with the object of avoiding intense heat during the day at certain seasons, to effect a surprise, to attack at early dawn, or to forestall an enemy by occupying a position.

The tribesmen, at an early stage in Tirah, learned that they were not strong enough to oppose an attack, and that their chances of success lay in attacking and harassing the rear-guard.

There is no operation in war more difficult for the commander or more trying for the troops than the retirement of a force in the presence of an enemy. In mountain warfare the difficulties are increased a hundred-fold; the retirement is often from higher to lower levels, the tribesmen are well-acquainted with the ground and the best positions to take up, and their mobility gives them a great advantage, they press on with vigour, and with an intuitive knowledge of how to take full advantage of the ground.

The difficulty of retirement is increased by the necessity of not leaving the dead or wounded on the ground. To carry a dead or wounded man any distance requires four men, besides another to carry the rifles, the result being a large target for the enemy and perhaps more casualties. There is also the danger of small parties becoming isolated, cut off, and attacked by superior numbers.

In jungle and forest warfare there is not the same difficulty as in the mountains owing to the enemy not being able to overlook the retirement from a height, and because the casualties are easily conveyed to the main body.

In all undertakings, to punish neighbouring tribes, the force should be sufficiently rationed and should not retire until it has satisfactorily carried out its duties, and the tribesmen are completely subdued and suing for terms. Losses must inevitably occur when the duty is but imperfectly completed.

When troops are sent out to destroy villages, too much is often attempted in one day, particularly if there is little day-light. Many of the losses in a rear-guard would be avoided if the force were to take up a position for the night in the village, carrying out the demolitions, (previously prepared) with deliberation early the next day, and thereby having ample time to return to camp before night-fall. When a force marches off, a carefully selected officer should be appointed to withdraw the out-lying piquets surrounding a camp. They should be withdrawn in succession, the most distant, of course, moving first.

In mountain warfare the transport should follow the advanced-guard, the main column behind and in touch with the rear-guard.

"Touch must be kept by each party with the party in rear by connecting files who can quickly pass on the information that touch is being lost. This arrangement should work mechanically without the necessity of frequently passing on the word to halt, and the main column will not leave the rear-guard isolated behind. When one party halts, it is utterly wrong, and contrary to repeated orders, for parties marching behind to close up and eliminate the intervals, which are so necessary in the vicinity of the advanced-guard and rear-guard." (Standing Orders for 1st Brigade (Hart's) in Tirah.)

The best method of conducting a rear-guard in mountain warfare has engaged the attention of practical soldiers. Pamphlets, books, and essays have dealt with the subject, and the papers have been flooded with correspondence. It appears to the writer that no definite rules can be laid down to meet all contingencies, the combinations of different kinds of ground being almost infinite. Rules may be departed from, but principles never. The necessary dispositions must be left to the skill of the commander of the rear-guard.

The withdrawal of troops in contact with the enemy might be carried out gradually by one or more parties retiring with steadiness and deliberation, a certain number of men, selected for their activity and shooting powers, being left behind to keep up a rapid fire, until the remainder have taken up a new position or positions under cover, when they will retire as rapidly as possible and join them. The new position or positions (as the case may be) should be selected to cover the retirement of other parties. When the covering troops are in position, the troops nearest the enemy will then withdraw in a similar manner. By this method there will be no cessation of fire. It will be seen that the same troops are kept in contact with the enemy. As in regular warfare in level country, the difficulty for all commanders of units is to decide when to retire. There must be no extreme hurry or rushing in the retirement, and no clustering together. In the event of many casualties occurring, men must be sent out from the covering troops to bring them in, and if the troops nearest the enemy are severely pressed, the covering troops must advance and repulse the enemy.

Counter-attacks are often essential when a rear-guard is severely pressed or hampered with wounded, but must not be made without definite orders from the commander. The retirement may become a rout, unless the rear-guard is prepared to assume the offensive and repulse the enemy.

The importance of the co-operation of mountain artillery cannot be over-estimated. This branch of the service is most efficient, and the battery commanders can be fully relied upon to take up the best positions within effective range to efficiently cover and support the infantry advance, and in retirements to afford similar co-operation, but it should be distinctly understood that although a battery may advance without orders, it must not retire without an order from the officer commanding the column, or the commander of the advanced or rear-guard, as the case may be. Signalling communication must therefore be kept up with the batteries.

The flanking piquets, posted by the advanced-guard to protect the line of march, will have to be carefully withdrawn under the directions of the officer who posted them. He will be responsible to the commander of the rear-guard that all are withdrawn, and arrange that no flanking piquet is withdrawn prematurely. The rear-guard is often much delayed by their not coming in quickly.

When the retirement is in a plain, a wide valley, or where there are a number of parallel ridges running approximately perpendicular to the line of retreat, it can be carried out by one portion of the rear-guard retiring, whilst the other covers the movement, and so on alternately.

After the Maizar affair on the 10th June 1897, the retirement to Sherani was carried out very successfully, positions being taken up on successive ridges. The wounded were sent in safely to the rear. A final position was taken up about a mile from the last ridge. The enemy dispersed on the arrival of reinforcements.

In many cases the retirement is down spurs on both sides of a valley, and an excellent cross-fire can be brought to bear to cover the alternate retirements.

If there is a deep nullah in rear, troops should not retire along the bed, but should keep on the high ground on the banks. These nullah beds afford much advantage to the tribesmen, as they can fire down them at the bends. Troops retiring in them, owing to the limited space, are much cramped and clustering cannot be avoided; they become, in fact, veritable death-traps.

On the 9th November 1897, a reconnaissance was made to the Saran Sar, east of Maidan, by the 4th Brigade. The retirement commenced too late. The rear-guard was fiercely attacked and hampered with dead and wounded. A party of Northhamptons retired down the bed of a nullah, instead of keeping to the high ground, where they would have been supported by two Sikh regiments, were cut off and annihilated.

On the 11th, another reconnaissance was made by the 2nd Brigade (Gaselee's). The retirement commenced in good time, and was skilfully carried out by the 3rd Gurkha scouts covering the withdrawal of the battalion. The mountain battery co-operated most effectively with the infantry.

Frequent complaints were made—probably justly—during the Tirah Campaign of the main column marching right away into camp, without a thought for the rear-guard. It must be distinctly understood that the advanced-guard must not advance too rapidly when the rear-guard is heavily engaged, and under no circumstances whatever should the rear-guard be left behind. There must, in fact, be no "rushing into camp," not even when the camp is quite close.

Experience has shown that the advanced-guard should move off in sufficient time to allow the rear-guard to arrive in camp some time before night-fall; allowance must, therefore, be made for the delay necessarily caused when the rear-guard becomes seriously engaged.

In the event of night coming on, when the rear-guard is being pressed by the enemy, a good position must be taken up for the night

and held at all costs. The rear-guard must then act as any detached force would under ordinary circumstances. It may be safe when the rear-guard is not severely attacked to continue the march after dark, but very careful arrangements must be made, and the close supervision of the Brigadier is essential. If, however, it is found necessary to leave the rear-guard behind, a new rear-guard must be formed for the troops that continue the march. This was done by Brigadier-General Hart on the 25th December 1897 on the march from Lala China in the Khyber to Karamna in the Bazar Valley.

About 5 P.M. on the 11th December 1897, the head of the main column of the 3rd Brigade (Kempster's) arrived in sight of the camp at Sher Khel in the Bara Valley. The Brigadier decided to continue the march. The transport which was in rear of the main column and the rear-guard were benighted. Major Downman, senior officer with the rear-guard, being pressed in rear and flank, very wisely decided not to continue the retirement, but to occupy some villages. He held his position admirably and successfully, repulsing all the enemy's attacks.

On the 16th November 1897, the 3rd Brigade (Kempster's) retired from the Waran Valley. The rear-guard was hotly engaged, several casualties occurring before and after crossing the Tseri Kandao. The tribesmen followed so close that they had to be driven back with the bayonet. Encumbered with wounded, and ammunition running short, the 15th Sikhs were unable to retire from the heights, until reinforced, when they drove off the tribesmen, inflicting heavy loss.

Lieutenant-Colonel Haughton, 36th Sikhs, skilfully withdrew his troops, but being hampered with wounded, and night coming on, he most successfully held some villages until morning, although repeatedly attacked throughout the night. By his action he saved the rear-guard. On this occasion a party of the Dorsetshire, endeavouring to march into camp in the dark, lost their way, and were overwhelmed and massacred.

The commander of a rear-guard should be most carefully selected when there is the probability of the rear-guard being seriously engaged. During the expeditions in 1897 when the Brigadiers were present with the rear-guards or personally commanded them, there was no case of excessive loss or grave disaster. The place of the Brigadier is evidently with the rear-guard during a retirement.

The retirement on the 13th December 1897, from Sher Khel to Guli Khel, was admirably carried out by Brigadier-General Westmacott, who personally superintended the retirement throughout. The rear-guard was seriously pressed by the enemy and continuously attacked.

On the return march from Burg in the Bazar Valley to the Khyber on the 28th and 29th December 1897, the baggage was always sent on ahead, behind the advanced-guard. The rear-guard of the 1st Brigade (Hart's) was harassed the whole way by the tribesmen. In no case did the retiring lines pass through each other. The Brigadier remained throughout with the rear-guard.

In spite of the excellent dispositions and action of a rear-guard, it will often be found that the troops suffer severely owing to the superior

numbers and vigorous action of the enemy. One of the best lessons learned during the expeditions of 1897 was that fresh troops must be employed, either to reinforce the rear-guard or to replace them altogether. If the General is with the rear-guard, he is in a position to give the necessary orders.

It will be seen that the highest qualifications of both officers and men are required for duty with a rear-guard : discipline, training, intelligence, activity, and absolute control of fire on the part of the men ; and knowledge of war, good eye for country, and common-sense in the officers.

4. Fortified camps. Outposts.

The site of a camp in mountainous country is generally restricted to ground, more or less intersected by nullahs, as at Maidan and Bagh. It is only in the plains, as at Bara, Jamrud, etc., that a site can be found on approximately level ground.

The camp is frequently commanded on one or more sides by hills, as at Karappa and Mastura.

At all the posts on a line of communication camps are required, and they should be secured against attack. When there is not much probability of attack, in-lying piquets only are held in readiness by each unit for the defence of its own front. If there is any probability of the camp being attacked or rushed, the whole perimeter is occupied by men, who sleep or bivouac immediately behind the parapet. Generally before sunset they are practised at falling-in.

The camp should not be broken up into portions between which there is not easy and safe communication. The north camp and the position on the Malakand Ridge were three-quarters of a mile apart, and the troops were exposed to the risk of being beaten in detail.

On the night of the 19th September 1897, about 200 swordsmen crept up a ravine to about 50 yards from Sir Bindon Blood's camp at Nawagai and charged, but they were repulsed. A formidable attack was also made on the night of the 21st.

A night-attack was suddenly made on Brigadier-General Jeffrey's camp at Markhanai on the 14th—15th September 1897, lasting six hours, but the enemy did not come to close quarters. Two officers and four men were killed, one officer and eight men wounded, and 98 animals killed or wounded.

The tribesmen in Tirah, however, made but few night-attacks, and they were not of a formidable nature. Piquets should be posted, at intervals, on any heights which are within range of a camp, and also on all approaches to it, to secure the camp against any sudden attack, and to prevent the enemy firing into camp (sniping) as much as possible.

On the night of the 25th—26th October 1897, there were about 35 casualties in the Karappa camp when piquets were not posted outside, the system of defending the camp from the perimeter proved most unsuccessful.

The field officer of the day is generally held responsible for the outposts. He makes all arrangements, decides upon the strength of each piquet, and satisfies himself that each piquet commander before starting knows exactly the ground he is to occupy, and the positions of adjacent piquets. Supports and reserves are rarely required.

The night piquets must never retire if attacked, and must hold their ground at all costs. It is rarely possible to reinforce them.

Out-lying piquets can seldom be employed with advantage in dense jungle, bush, or forest.

At two of the day piquets of the Mastura camp, in 1897, the men lit fires on retiring at sunset. They were not held at night, as they were at a considerable elevation and the cold very severe, and the range to the camp was also rather far. The enemy never discovered that they were unoccupied at night.

A piquet on the top of a hill has such an advantage over any enemy, who might attempt to attack it, that it can generally hold its own without undue risk. But if a piquet is posted on a ridge, with heights above it, it is very liable to attack. When there is sufficient time and materials are available, obstacles should always be arranged around piquets.

On the night of the 7th--8th February 1898, No. 16 Piquet, 1st Brigade (Hart's), at Ali Masjid, was vigorously attacked by the enemy, who fired from ranges of 10 to 20 yards, and threw large stones into the sangar. It was held by a sergeant and six men of the Sussex with great determination for nearly an hour and a half, only one man being wounded, and he happened to be hit twice.

5. Attack and defence.

It is a fundamental principle, admitting of no qualification, that Asiatics should be attacked whenever met with; the moral force of dash and audacity should never be forgotten.

It is impossible to lay down stereotyped rules for the attack. The configuration of the ground up to the position occupied by the enemy, the actual position occupied by him, and many other considerations, can alone guide a commander in determining his plan of attack. The commander, who has the necessary qualifications, will be guided by his genius, and not by fixed rules.

The reconnaissance having been made, as previously explained, and the commander having decided upon his plan of attack, the artillery take up their first position and prepare the way for the advance of the infantry by a concentrated fire upon the enemy's position and any advanced sangars, supporting the infantry throughout the battle, and taking up more advanced positions if absolutely necessary. Shelling an enemy's position has often the disadvantage of driving the tribesmen out of it, without inflicting much loss upon him.

On the 29th October 1897, the 1st Brigade (Hart's) covered the direct advance to the Sampagha Pass, occupying villages on the right and the left flanks, and a rocky hill in the centre between the Kandi Mishti and Sampagha ravines. The 2nd Brigade (Gaselee's) preceded

by the Gurkha scouts entered the Sampagha ravine in the centre, supported by the 4th Brigade (Westmacott's) and the 3rd Brigade (Kempster's). Three mountain batteries of the 1st Division opened fire from the first artillery position on the rocky hill at a range of 1,850 yards, and afterwards the three batteries of the 2nd Division advanced and took up a position firing on the crest of the pass at a range of 2,200 yards, and eventually took up a third position. On the 31st October, the 4th Brigade led in the centre, and occupied a low detached mound, the three batteries of the 2nd Division opened fire on the crest of the Arhanga Pass. The 2nd Brigade advanced on the right, and the 3rd in echelon on the left. The 1st Brigade meanwhile dominating the Mastura Valley.

The attacks on the Sampagha and Arhanga Passes are both examples of the employment of large forces in mountain warfare and the co-operation of infantry and artillery.

Frontal attacks are generally costly operations and inflict little loss on the enemy. It is generally advisable, therefore, to combine a flank with a frontal attack, if the ground is favourable. The frontal attack may be only a retaining or delaying action. In some cases, the attack may be directed against the enemy's rear. Experience has shown that the tribesmen are seldom able, owing to want of organisation, to oppose an attack in flank or in rear. In the event of the enemy withdrawing men to strengthen his flank, the frontal attack should be pushed home.

If a combined frontal and flank attack is contemplated, careful calculations must be made to ensure that both attacks are made simultaneously.

In mountain warfare the firing line should be as strong as possible, with supports near at hand. Reserves are not so necessary to feed the firing line as to provide against any Ghazi rush or unexpected emergency. Fire discipline is paramount and should be carefully maintained throughout; long-range fire is of little use, the advance should be continued without firing as long as possible up to within medium range of the position (700 to 800 yards) by sections in extended order. There should be a steady advance, and no attempt at doubling up hill. Halts should only be made to enable men to re-gain their breath. If the ground at the summit is much exposed, a rush should be made for the nearest cover. Bayonets should be fixed at about 300 yards from the enemy. The tribesmen, however, rarely oppose a bayonet charge. Once the troops are launched against a position, there should be no hesitation, no counter-orders. Any success should be made good by pressing forward and sending up supports and reserves.

The attack on Dargai on the 18th October 1897 is an example of a successful frontal attack combined with a flank attack. Sir William Lockhart had intended marching from Shinauri to Karappa on the 20th October; but, owing to the working parties on the road from the Chagru Kotal towards Karappa being molested by the enemy who occupied the heights to the west, and especially from the village of Dargai, about 1,800 yards to the left of the line of advance, and it having

been reported that two days' work was necessary to make the road passable for transport animals, he determined to attack Dargai.

The frontal attack was directed by Brigadier-General Westmacott. His troops reached the Chagru Kotal at 8-30 A.M., and at 9 A.M. the attack commenced, the 1st Battalion 3rd Gurkhas leading, with the 2nd Battalion King's Own Scottish Borderers in support, and the 1st Battalion Northamptonshire Regiment in reserve. The advance of the troops was covered by No. 5 and No. 9 Mountain Batteries.

The flank attack was commanded by Brigadier-General Kempster; Lieutenant-General Sir Power Palmer, who had been appointed to conduct the operations, accompanied this column. The force started from Shinauri and moved in a north-westerly direction, but at the 5th mile, owing to the difficult nature of the ground, No. 8 Mountain Battery, with all laden animals, had to be sent back to Shinauri, escorted by the 1st Battalion Dorsetshire Regiment and two companies of the 15th Sikhs. The remainder, consisting of the 1st Battalion Gordon Highlanders, 1st Battalion 2nd Gurkha Rifles, and the 15th Sikhs continued their march, with the Gurkha scouts leading.

About noon, when the flank attack began to develop and the tribesmen's line of retreat was threatened, the opposition slackened, and the position was carried by a company of the 3rd Gurkhas. At 2-30 P.M. the concentration of the two columns was completed.

Brigadier-General Westmacott began his withdrawal to the Chagru Kotal shortly afterwards, covered by Brigadier-General Kempster's troops. A hot engagement ensued between the enemy and the rear-guard, our guns making excellent practice, and the Gordon Highlanders with two companies of the Scottish Borderers steadily holding their ground and checking the advance of the tribesmen. (*Vide* Sir William Lockhart's Despatch.)

The second attack on Dargai on the 20th October is an example of a frontal attack on an almost impregnable position, and which was not combined with either a flank or a rear attack.

It must first be stated that Sir William Lockhart most distinctly ordered the advance to be from Shinauri to the Chagru Kotal, and thence down the Chagru defile.

Major-General Yeatman-Biggs had reported to him on the 19th that Dargai and the heights were strongly held by the enemy, and that he proposed to advance the next day to Karappa *via* Fort Gulistan, the Samana Suk, and the Tsalai Spur. To this Sir William replied that he desired Major-General Yeatman-Biggs to adhere to the original plan of movement, and remarked that, while it would be necessary to clear the Dargai heights overlooking the road to the west, the enemy would probably retire as soon as troops had been pushed on to the point where the Narik Darra joins the Chagru defile, as the enemy's rear would thus be threatened.

The troops of the 2nd Division left Shinauri at 4-30 A.M. on the 20th and reached the Chagru Kotal at 8 A.M.

The 3rd Brigade (Kempster's) began its attack on the Dargai heights at 10 A.M. by a concentrated fire from No. 1, No. 5, and No. 8

Mountain Batteries. The attack was led by the 1st Battalion 2nd Gurkhas, supported by the 1st Battalion Dorsetshire Regiment. The 2nd Battalion Derbyshire Regiment was in reserve, followed by the 1st Battalion Gordon Highlanders.

By 11-30 A.M. the above force was in position, under cover, in readiness to capture the heights, but when the 2nd Gurkhas and Gurkha scouts of the 1st Battalion 3rd Gurkhas made their first rush across the open, they were met by such a hot fire that they were unable to advance further.

At 2 P.M. the Dorsetshire Regiment was ordered to storm the enemy's position, but were unable to advance beyond the line held by the 2nd Gurkhas. Brigadier-General Kempster then ordered the Gordon Highlanders and the 3rd Sikhs to advance. The Gordon Highlanders dashed across the open and won the heights, followed closely by the 3rd Sikhs. The position was won at 3-15 P.M.

The total casualties on the 20th amounted to 38 killed and 167 wounded; whereas they amounted on the 18th to 9 killed and 32 wounded.

Sir William Lockhart, whilst acknowledging the success of the operations, has pointed out that the advance was not conducted in the manner in which he had intended. The General Officer Commanding the 2nd Division restricted himself to a frontal attack on the Dargai heights, without employing a portion of the large force at his disposal to turn the enemy's rear. He is of opinion that the loss would not have been heavy if the enemy's line of retreat had been threatened. (*Vide* Sir William Lockhart's Despatch.)

As examples of the use of cavalry, we may take the following:— During the attack on Agrah and Gat in the Watelai Valley on the 30th September 1897, the Guides Cavalry "held in check in the most bold and brilliant manner a considerable force of the enemy who advanced from the westward towards our left flank." (Despatch.)

On the 9th August 1897, Lieutenant-Colonel Woon from Shabkadr, with a force of 586 rifles, 151 lances, and 4 guns, advanced to the attack of the Mohmands, about 6,000 strong, occupying a position on an undulating plateau at the foot of the hills. He made a frontal attack with his infantry, moving his cavalry and artillery to turn the enemy's left flank. The engagement was a severe one, the enemy making a determined attempt to turn the left flank, and threatening the rear, Colonel Woon commenced to retire. Brigadier-General Elles arrived and took command. He brought the guns into action to support the infantry, sent the cavalry well to the right flank, and ordered the two squadrons of the 13th Bengal Lancers to charge right along the enemy's front and to double up his line. The charge was admirably carried out, extending for one and a half miles over stony ground, and completely cleared the enemy from the front. The Mohmands were repulsed and retired into the hills.

It has been proved over and over again that attacks against the tribesmen should be commenced at dawn or as soon after as possible. If commenced early, there is ample time for attack, the troops can

afterwards form up in camp and protect themselves for the night, and supplies can be brought up from the rear.

In jungle and forest warfare, in Burma for example, combined frontal and flank attacks answer very well.

The enemy generally hold stockades or villages, and the forests are seldom so dense that paths cannot be found which admit of an attack on the enemy's flank or rear. Cavalry or mounted infantry should be with the turning force to inflict loss on the enemy when he is driven out of his defensive position.

A small force should march with the intervals between the advanced-guard and main body, and also between the rear-guard and main body, considerably reduced, so that the main body can re-inforce either the advanced or the rear-guard. The men should be carefully instructed to face mechanically outwards to the right and left. (*Vide "Marches."*)

In attacking a mountain defile, the high ground on both sides must be crowned, and cleared of the enemy, before the column can advance. If the defile is long, columns will advance on both sides of it, and post flanking piquets, the latter remaining in position until the rear-guard of the column in the defile has passed below.

On the 22nd November 1897, Sir William Lockhart marched from Bagh to Dwa Toi. The road through the defile was exceedingly difficult, the path in places being along the face of precipitous cliffs, which formed a deep and narrow gorge. A stream, two feet in depth, had to be repeatedly forded, and was commanded by high hills.

The 2nd Battalion Yorkshire Regiment held the hills on the right, and the 2nd Battalion 2nd Gurkhas those on the left, and occupied them until the return of the force to Bagh on the 24th. The march was opposed throughout the day. As the ground was unsuitable for the employment of artillery, the successive positions of the enemy had to be taken by the advanced-guard.

During the operations in Mekran on the 31st January 1898, the Baluch chiefs took up a position at Gok Prosh, half a mile long on some steep hills, covering the mouth of a defile. The advanced-guard deployed and advanced without firing to 800 yards from the position. A reconnaissance having been made, Colonel Mayne decided to attack the enemy in front and on both flanks. As soon as it was seen that both turning movements were working well round and getting towards the enemy's rear, the centre made their final advance. A Ghazi rush was repulsed, and the enemy completely defeated, our losses being 5 killed and 9 wounded.

Night-attacks are generally made with the expectation of capturing a position occupied by an enemy, with less loss than would be occurred by day. They have many disadvantages:—The enemy has an intimate knowledge of the ground, the attacking columns are very liable to lose their way, to become disordered; and there is the risk of panic, and of one column firing into another. It is so difficult to time the march of the different columns that an opportunity may be given to the enemy to overwhelm one column before it can receive the co-operation

of any other column. It is also almost impossible for the commander to do more than direct the operations at the start. Very careful preparations must be made for all night-attacks. Detailed orders must be issued and communicated to all concerned.

The assault should be made in a compact body with the bayonet, and as little firing allowed as possible.

Vigorous and effective pursuit is essential to complete a victory, but difficult owing to the extreme rapidity with which the tribesmen retreat and disperse when defeated. Cavalry or mounted infantry should be employed if possible.

In Tirah the mountainous country did not admit of cavalry being employed. After the attacks on the Sampagha and Arhanga Passes, there was no pursuit, and consequently the enemy suffered but little loss. An infantry pursuit would have been a hopeless undertaking.

The following are examples of successful pursuits by cavalry :—

On the 15th September 1897, a squadron of the 11th Bengal Lancers overtook the Mamunds, who had made an attack on Brigadier-General Jeffrey's camp during the previous night, killing 21 and dispersing the rest.

On the 2nd August 1897, the Guides and the 11th Bengal Lancers pursued the routed enemy in the Khar Plain, cutting up and spearing them in every direction ; later on pursuing them towards Chakdara, doing some execution, but were re-called, as the horses were fatigued by their previous labours.

There is no objection to a division of force, provided that the divided portions are superior to any force of the enemy likely to be encountered. In warfare on the North-West Frontier, division of force has the moral effect of alarming the tribesmen ; they have not the skill, organisation, discipline, and leadership, to act on interior lines and bring their concentrated strength upon one of the columns. Each man thinks first of his own individual interests, and very naturally prefers to oppose the force which is entering his own particular country.

In jungle and forest warfare, division of force is often advantageous.

The enemy is rarely met with in force, and the routes to the objective are often unknown. As each of the columns is superior to any force likely to be encountered, one at least is likely to succeed.

"In March 1887, the troops were split up among 141 posts" in Burma (The Third Burmese War, Keene). Although this was a disadvantage in the impossibility of combined operations, it was sufficient for the purpose, as the enemy could not concentrate in overwhelming numbers, and the country was soon free of dacoits.

Detached forces were frequently employed in Tirah in 1897. They were of the nature of flying columns, usually consisting of a brigade with divisional troops attached, under a brigadier. The troops were rationed for a certain number of days, and this necessitated having a large number of transport animals.

L

We must now refer to the defensive. It is an accepted principle that a purely defensive attitude should never be assumed, except temporarily, in warfare, with Asiatics. In all kinds of warfare, it is generally tactically unsound in principle, a sign of weakness, and an acknowledgment of the superiority of the enemy. When a defensive attitude is temporarily assumed, as in camp at night, it is with the tacit understanding and determination of resuming the offensive at the earliest possible time or opportunity. This principle necessarily does not apply to small parties, such as out-lying piquets or small garrisons, although the latter are often able to make most successful sorties.

A force may be compelled, when attacked on the march by large numbers of the enemy, to act for a time on the defensive, but a vigorous counter-attack should be made directly the enemy is disordered and the attack repulsed. Similarly, a large force may be obliged to take refuge behind its entrenchments (as at Sherpur in 1879), but frequent sorties should be made, which must neither fail nor miscarry, as this would have a bad moral effect upon troops. Successful sorties have many advantages, inspiring and encouraging the troops and preventing their demoralization, and showing the enemy that there is life and vigour in the force. General principles for the selection and requirements of a defensive position are laid down in the drill-books, it is only necessary to reiterate the statement that "it is impossible to lay down precise rules on the subject." Commanders must decide what must be done under so many possible combinations of ground, strength of enemy, etc.

The estimate of five men per pace (*vide* Infantry Drill) for a fairly strong position, partly entrenched, appears large for mountain warfare. An allowance of two men per pace would probably be ample. In jungle, wood, or forest warfare, a clear field for fire is most important, but it is very often quite impossible to fulfil this condition.

In the event of a sudden assault of the enemy—a Ghazi rush for example—the firing line must be strongly re-inforced, the defenders being posted in two-rank formation. Careful fire discipline must be maintained, volleys being fired as long as possible, and the bayonet of course freely used in the event of the enemy penetrating the firing line. Sentries should fire on the advance of the enemy at night. Artillery fire case and star-shells. The value of machine guns cannot be over-estimated. As a rule, all these brave assaults of the tribesmen have been defeated with great loss, the reason may be found in the independence of the individual warrior and consequent want of concerted action of the whole, and also there being no supports and reserves under an acknowledged leader to re-inforce and make good any success gained.

Bonfires are often a great advantage when placed on the approaches by which the enemy is obliged to advance. On the 29th July 1897 they were lit in front of the Bengal Sapper and Miner enclosure at the Malakand, and the defenders had a less severe attack than on the previous night.

At Chakdara on the 2nd September 1897, the enemy attempted to pass the barbed wire entanglements by throwing down bundles of

grass upon them. They also lit grass about three yards from the doorway of the signal station tower. There is no remedy for this, except a sortie to extinguish the fire.

The fortified villages can be occupied as posts ; they are generally in groups, with flanking towers at the angles, and often most strongly constructed of a sort of crib-work, large beams being laid longitudinally and securely bound together, above this another row of beams is laid transversely about 4 or 5 feet above the lower, the space between the rows of timber being filled up with large stones. The towers are solid for some height up, and surmounted with one or two stories. The defenders reach the rooms by ladders or ropes from the outside, which can be afterwards hauled up. The walls connecting the towers, and which form the village enclosure, are strong, tough, and bullet-proof, and are often loop-holed.

Mechanical arrangements can easily be made for laying guns and machine guns at night, and also for directing rifle fire. The latter arrangement was done at the Jamrud and Ali Musjid camps in 1897-98.

An excellent example of the action of a small force in forest warfare is found in Lieutenant Grant's operations in 1891. He was in command at Tammu with 80 men and ordered to advance upon Manipur. On the 28th March, he started from Tammu, and, after marching 4 miles, the enemy opened fire, but retired before the advanced-guard. He continued his march on the 29th, halting from 5 P.M. until 10 P.M., when he resumed his march. A small force of the enemy had taken up a position in a shelter trench on a hill and had felled some trees across the road. The position was taken by a flank attack. The enemy again retired before the force on its arrival at Palel on the morning of the 30th. By dawn on the 31st, the party arrived at a village, 5 miles from Thobal and 19 miles from Manipur, his flanking parties driving the Manipuris before them. Continuing the advance, it was found that the enemy had now taken up a position behind some walls and hedges, with a stream in their front. Lieutenant Grant successfully carried the position, advancing with two sections each of 10 men in the firing line, 10 men in support on both the flanks, and 40 men in reserve. The advance so far had been most successful, and the small force had had frequent engagements with the enemy.

Owing to the large force of the enemy, Lieutenant Grant was now compelled to take up a defensible position on the far side of the stream at Thobal. The Manipuris brought up two 7-prs R. M. L., and made two attacks on the 1st April, in both of which they were repulsed. On the 2nd, the position was strengthened, the enemy making no attack. On the 5th, the enemy occupied a village in rear of the position, and another on the right flank ; and, at dawn on the 16th, opened fire with their guns. At 8. A.M. the enemy's infantry advance to the attack, but Lieutenant Grant made counter-attacks and repulsed the enemy. These operations are a good illustration of a successful active defence of a position against a large hostile force.

On the 9th April, after receiving orders to retire, Lieutenant Grant successfully withdrew from his position at Thobal.

The Commander-in-Chief brought to notice the high opinion he had of Lieutenant Grant's conspicuous personal daring and unflinching resource, and of the endurance and heroism displayed by all ranks under his leading, and considered that Lieutenant Grant's example shows what is possible for a British officer, with a handful of devoted native soldiers, to accomplish by prompt initiative and soldier-like skill.

6. Cavalry, Mounted Infantry, Artillery, etc.

On the North-West Frontier, reconnoitring, scouting, raiding, ambuscading and surprising the enemy, pursuing and charging during a general action, are some of the numerous and important duties of light cavalry.

Whether mounted or dismounted, cavalry will always be found of inestimable value. Its value and moral effect were proved again and again against the Mohmands and Mamunds, etc., the tribesmen having a wholesome dread of our cavalry.

Their dismounted duties are only second to their excellent and useful mounted work.

In broken ground the action of cavalry must be dismounted. By skilful dispositions a portion can act dismounted, whilst the remainder hold the horses under cover, always near at hand in broken ground or in the vicinity of villages.

On the level plains up to the mountains, cavalry always has been and always will be invaluable. It is only in dense jungles and impenetrable forests that cavalry may perhaps cede the palm to mounted infantry. Cavalry is exposed to ambuscades, concealed obstacles, the danger of getting involved in impracticable ground—impossible on all occasions to avoid—and coming under the fire of tribesmen under cover.

They have the difficulty, just as infantry have, that the wounded and dead cannot be left on the field. Sir Bindon Blood (Despatches—Malakand) testifies to the invaluable services of the cavalry, sweeping the country wherever they could go, carrying out reconnaissances, protecting signalling parties, and watching the enemy's movements. The enemy in the Mamund Valley never dared to face them in the open.

Major-General Elliot, after the Simla Lecture, referred to the brilliant services of the cavalry, the extraordinary value of the arm, and the mistaken view held of its capabilities in a difficult hilly country, and their excellent work dismounted.

Cavalry can fight on foot and on horseback, whereas mounted infantry can only fight on foot. The latter are essentially infantry, not cavalry, and are mounted on ponies, camels, etc., with the object of conveying a force of infantry from one place to another, with greater rapidity than would be possible on foot. Mounted infantry is extremely useful when there is no hostile cavalry, but will never supersede cavalry, except when the climate is unsuitable for any animals except those of the country.

After the action at Gok Prosh in Mekran, the cavalry started at 5 P.M. on the 3rd February 1898, followed about 8 P.M. by 45 infantry mounted on ponies and camels, and later on, at 10 P.M., the remainder started. The cavalry marched the 30 miles to Charbuk in seven hours, surrounded the fort, the mounted infantry arriving only four hours after them, the guns and main body arrived at 10 P.M. on the 4th. The fort surrendered.

On the North-West Frontier, mountain artillery is of inestimable value in shelling positions held by the tribesmen prior to an attack, and in preventing them occupying positions during an attack.

Owing to the difficulties of the ground, it is rarely possible to employ any guns of heavier calibre than the 7-pr. mountain gun. These have little effect upon marksmen ensconced behind rocks. Upon earthworks, sangars, and solid masonry walls of fortified villages, the effect is almost *nil* with the present service shell, but a new and more powerful shell will soon be introduced.

Except in the valleys and plains of Afghanistan and Baluchistan, it is seldom possible to use field or horse artillery.

On the 23rd August 1897, "K" Battery, Royal Horse Artillery, opened fire at 3,000 yards on the tribesmen at the mouth of the Khyber and forced them to retire.

A field battery did excellent service at Landakai, Swat Valley, on the 2nd August 1897.

The principle of massing guns, whenever possible, should be borne in mind; and the object should never be lost sight of that the guns are to concentrate their fire on that part of the enemy's position which is at the moment most formidable to the infantry. "Do not break up a battery if you can possibly help it, but preserve the unity of command, and keep in hand the great power of combined fire." (General Tyler.)

It may be necessary to break up a battery, when space does not admit of all the guns coming into action from a position. It must also be remembered that a battery takes up much space on the line of march.

It is evidently impossible in forest warfare to mass guns in the thick underwood.

As a rule, the enemy has no artillery, but there are exceptions. The Manipuris employed artillery at Thobal in attacking Lieutenant Grant. At Maiwand, 27th July 1880, Ayub Khan was superior in guns to us.

Captain Yorstoun, in the Journal of the United Service Institution of India, April 1898, states that the ideal machine gun should never jam, accompany troops in any country, quickly come into and out of action, and be handled in an intelligent manner.

"The first principle is that they shall not hamper troops."

"A wise commander will always give his machine guns great latitude of action." "Leave everything to the discretion of the gun commander."

In Tirah the maxims had seldom a chance as "the enemy were dotted about in twos and threes."

The maxims did good service at Chakdara on the 2nd August 1897 in the Swat Valley, and also during the attacks at the Bedmanai Pass during the Mohmand Expedition, 1897.

7. Training of Troops.

For the instruction of troops stationed in the hills in mountain warfare, a memorandum was issued by the Commander-in-Chief last year; and a syllabus of instruction laid down for guidance. The system of instruction was progressive from company to battalion. Each day's work was carefully prepared for the companies by the commanders. A few men were told off for a skeleton enemy. When available, mountain guns co-operated with infantry. General Officers Commanding Districts were directed to see battalions and lesser units under training. Certain books were recommended as guides to officers.

This was an excellent step, combining as it did practice with theory. The instructions were tentative and will probably be improved.

It would be as well to bear in mind that, except perhaps at Quetta and other stations in that district, the ground in the Himalayan stations differs considerably from that on the North-West Frontier. The slopes are generally thickly wooded; there is an absence of "tangis" (narrow gorges with more or less perpendicular sides) and valleys with deep "nullahs" (ravines). Much can, however, be learnt in our hill stations, which will be useful in the event of future hostilities with the tribesmen.

Moral superiority is paramount in war. It will be found that great and successful commanders have always been students of the art of war. No officer's experience is so universal that he can neglect the experience and teachings of others. Mere reading of books is of little benefit without thought and reflection, and theory is of no use without frequent practice in the field, for "Practice makes perfect." Officers must be prepared to devote much time to study and hard work. With highly educated, well-trained, and zealous officers, there will be little difficulty in the training of troops. "Formidabilior cervorum exercitus, duce leone, quam leonum cervo."

Men require more training in taking cover and improvising it when wanting. They must be taught now-a-days to be less of machines, to use their wits more, and to act on their own initiative on occasions. Self-reliance should be encouraged.

The highest standard of education should be maintained among the officers. The more highly educated and well-trained the officers are, the better the men will be. The garrison class course is much more practical now than it was ten years ago. Staff rides have been introduced, and the tendency is certainly to occupy more and more of the officers' time in military duties. The days have nearly passed when officers who studied their profession were called book-worms.

It is to be regretted that the Government of India has not published the history of any one of the numerous small wars on the frontier. The histories written by officers are perhaps good as far as they go, but they are incomplete and often inaccurate, the writers dilating upon what they witnessed themselves, but mostly ignoring what took place in other parts of the theatre of war.

Many officers in India have clamoured for the addition of a long section on mountain warfare to "Infantry Drill." The writer has heard the opinions of several experienced officers on the subject; the general opinion is that it is unnecessary, and would do more harm than good.

At the Garrison Class Examinations in India, the questions on tactics are now very much based upon frontier conditions; officers are, therefore, compelled to study mountain warfare.

8. *Scouts.*

A return to the old organisation of a light company in every battalion has lately been mooted. In [the] writer's opinion this would be a retrograde step, as the battalion would be practically starved to provide one company, and the other companies would suffer when officers who had taken particular pains to train their companies were liable to have the best men taken from them.

In these days, with young and active men, all should be light infantry.

There would be no objection to having one section in each company composed of especially trained men, selected for their activity, strength, powers of endurance, and athletic qualities; for their dash, pluck, bravery, and self-reliance; for their powers of vision, hearing, and good shooting, accurately judging distances; and chosen for their intelligence and common-sense. A badge might be given as an inducement to others to be enrolled.

There is a distinction between a scout and a skirmisher. A scout is an exceptional man, either cavalry or infantry, trained to reconnoitre, and is not a fighting man, whereas a skirmisher is essentially a fighting man.

9. *Transport and Convoys.*

In mountainous country mule transport is alone possible at first. If the campaign lasts sufficiently long, the tracks can be improved and roads made, suitable for camel and even wheeled traffic.

The question of satisfactory transport is most important; the impressed drivers have been hitherto undisciplined, and liable to leave their animals and bolt, when attacked or exposed to fire.

This occurred during the attack on the rear-guard, 4 miles from Gogra Hill, on the 11th September 1897, the camels throwing their loads and scattering in all directions.

In Tirah convoy guards were usually sent with the wounded and with treasure and ammunition columns. Certain places on the line of

communication between camps were strongly held, as at Dargai, Sampagha and Arhanga Passes.

When the Khyber was held at the end of December 1897, flanking day piquets were furnished by the Brigadier at Landi Kotal, half way to Ali Musjid. The brigade at Ali Musjid piqueted the road half way to Landi Kotal and also half way to Jamrud. The brigade at Jamrud, in a similar manner, piqueted the road half way towards Ali Musjid and some miles towards Peshawar. At first, in addition to piqueting the road, escorts accompanied the convoys, but these were not required later on. The piquets withdrew in good time in the afternoon.

In forest warfare armed escorts are necessary, as flanking piquets are generally impossible. These escorts are distributed in parties, usually at the head, centre and rear when the convoy is small, but distributed more or less throughout the convoy when it occupies much length of road.

10. Raids, Surprises, and Ambuscades.

Absolute secrecy is essential for success in raids, surprises, and ambuscades. At first only the Brigadiers should be informed of the intended operation; later on the commanding officers should have full information and detailed orders. The fewer acquainted with them the better.

When a surprise is to be carried out at night, rifles should not be loaded, the bayonet alone being depended upon.

Orders may be issued for a march in a contrary direction, and only when the troops assemble to march off should the intended direction be divulged.

Before the action at Dargai on the 20th October 1897, the spies were told that an attack would be made on the enemy's right flank. This incorrect information was rapidly conveyed to the tribesmen.

Operations, once determined upon, should be carried out with the utmost resolution.

In open, level country, cavalry or cavalry and infantry working together is particularly well suited for ambuscades, the infantry being ordered to advance a certain distance, and then to retire on the cavalry in ambush in rear. This ruse against tribesmen is often effective, as they regard a retrograde movement as a victory, and often advance from their position. The ambuscade can be more easily carried out by the cavalry advancing, and the infantry remaining in ambush. For success, strict discipline is essential.

On retirement from a village, the enemy can sometimes be ambuscaded by leaving infantry concealed in it.

The tribesmen almost invariably occupy villages as soon as they think they are evacuated.

During a retirement down a valley with spurs on both sides, there are often excellent positions for infantry to be left in ambuscade on the spurs.

The advanced-guard should be able in mountain warfare to ascertain whether the enemy have arranged an ambushade. In forest warfare the advanced-guard can only be expected to detect an ambushade just in front. The undergrowth is so thick in places along the track that the first indication of the presence of the enemy is a volley from the flank or flanks. It was found in Burma that the ambuscaders usually fired at the van-guard and then bolted.

"It is the unexpected which happens"; in all these enterprises, therefore, great vigilance and alertness are always necessary.

Conclusion.

The writer has throughout this essay laid great stress on the fact—sometimes overlooked—that tactical principles are the same at all times and in all places; the same to-day as in the time of the Romans; the same in Asia as in Europe; and the same in the plains of India as in the mountains; it matters not whether the foe be civilized or so-called uncivilized, or what his method of warfare may be. But this essay has been written in vain, if it has not clearly demonstrated that, in order to comply with the eternal principles of the art of war, the manner of applying our knowledge must be ever varied and ever varying.

Further, an effort has been made to show how extremely difficult it is in mountain warfare to put in practice what we perhaps know so well in theory.

Numerous examples have been given to illustrate the fact that although it is easy to criticize others, it is difficult to do better oneself.

We may briefly recapitulate that the principles to observe in battle are:—To be the strongest at the decisive point; to develop the full striking power of the weapons in use; to choose ground suitable for the arm that predominates; to ensure the co-operation between the three arms, whenever such co-operation is possible; to dispose the troops, so that they offer as small a target as possible to the enemy; to take full advantage of the ground, and of the mistakes made by the enemy, and so on, not forgetting that the moral is to the physical as three to one.

Turning to tactical details, we find that they depend upon many conditions and circumstances; such as the nature of the country, the time of day or night, the climatic and the atmospheric conditions, the characteristics of the enemy, his armament, and method of fighting, etc.

Until these conditions and circumstances are known, it is impossible to lay down in any detail our own line of action. In other words, we must act according to circumstances. What is right to-day, may be wrong to-morrow. We have insisted upon one point, namely, that experience has proved, over and over again, that, for success in warfare against Asiatics, we should take the offensive, and never stand upon the defensive, except under the most exceptional circumstances.

Particular stress has been laid upon the great difficulties of conducting a march or directing a rear-guard in mountain warfare.

M

More might have been said regarding transport, as it is now generally admitted that almost everything depends upon an efficient transport service.

Any considerable addition to the drill-book on the subject of mountain warfare is not advocated, the writer considering that if we act up to the spirit rather than to the letter of the instructions, they are sufficiently elastic to meet all cases; and that they give ample latitude to officers to act according to their judgment, under the different circumstances that arise in frontier warfare, provided that we take advantage of our opportunities to study and to reflect upon the peculiarly difficult conditions that are inseparable from military operations in mountainous country.

SOME REMARKS ON THE PRESENT STATE OF THE INDIAN VOLUNTEER FORCE, AND A PROPOSAL FOR ITS REORGANISATION AS MILITIA.

BY LIEUTENANT E. DAWSON, UPPER BURMA VOLUNTEER RIFLES.

I.

My personal experience as a volunteer in India has been limited to one province, but I have no reason to believe that the volunteer force of that province is not a fair sample of the whole. Believing that it is so, and always excepting two or, perhaps, three corps, the names of which will at once occur to every reader, I have no hesitation in saying that the Volunteer Force of India, considered as a part of the defences of the Empire, leaves so very much to be desired that its condition is highly unsatisfactory.

Probably few persons, who are in a position to know, and least of all volunteer officers, will be found to disagree with this view. The defects of the system have been from time to time pointed out in these columns, and various remedies have been suggested. The writers have, however, usually confined themselves to details. I propose to take a broad view of the whole subject, starting from a basis which may be briefly stated as follows:—

Proposition (1).—That the efficiency and therefore the value of the Indian Volunteer Force at the present time does not amount to a fair return for the expenditure of Government upon it; in other words, that Government is not getting its money's worth.

Proposition (2).—That this condition of things is remediable, but only by a complete reorganization of the whole system.

With regard to (1), I do not wish to appear to be begging the question, but at the same time I feel that to give illustrations of what I mean would be to waste space and time. Every volunteer, who has ever taken any interest in his work, must have been continually aware of the countless defects of the system, and of the disheartening conditions under which that work is carried on. As for the others—the non-workers,—I do not address myself to them; they are not in the least likely to read this, and they themselves constitute one of the worst evils to be removed. Not wishing, then, to occupy space in detailing the glaring faults of the system, I would only ask regular officers who feel any interest in the subject (and I am glad to believe there are many)

to question any working volunteers of their acquaintance on the following points:—

- (i) "*Efficiency*."—What proportion of the rank and file returned as efficient are *really* even nominally so?
- (ii) *Officers*.—How many take the trouble to learn their drill, even parade-ground movements? How many go on year after year without passing the very elementary examination which is miscalled "proficiency"?
- (iii) *Commanding officers*.—Besides the above question, do they know anything about the Volunteer Act and the Regulations; what their powers and duties are, etc.? Do they ever think of the latter as "duties" in the same way as of their official civil work?

The truth of my *proposition* (1) will be especially apparent to those who, from observation or experience in Great Britain, or in any British colony, have learnt to what a state of efficiency volunteers *can* be brought. I am well aware that it is not among officers of the regular army that adverse critics of *volunteer's work* are usually found. It is your comfortable citizen who thanks God daily that it is part of the scheme of things for him and his business and his property to be well protected by other people; it is this kind of person, as a rule, who talks about "playing at soldiers" and smiles indulgently when he sees a volunteer uniform. But professional soldiers may, and often do, disapprove of "*volunteering*" in the abstract. In this, so far as the theory of the thing is concerned, I find myself to some degree in sympathy with them. In all probability, if there had been no volunteer movement, our regular army would long ago have been raised to a strength considerably nearer that of the army of a Continental Power. It is, however, unnecessary here, and would, in any case, be of purely academic interest, to consider what would have been the benefit derived by the nation from such an increase, or the effect upon history which it might have had. It is our business to deal with things as they are. We find, in practice, that, after passing through

"—Times that no one talks of"
 "And years of horrid doubt,"—

the Volunteer Force of Great Britain, with all its anomalies, has grown to be reckoned as an integral part of the national defensive system. We find that the War Office has taken the wise and important step of attaching volunteer corps as supplementary battalions to the territorial regiments. We find that in two important items—shooting (considered apart from fire discipline) and bodily strength—the average volunteer is the equal, if not the superior, of the average regular soldier. We have a body of officers, a large number of whom, without any special encouragement and at extraordinarily small cost to the State, have passed the prescribed tests in various branches of military training. We find the whole force animated by the best kind of *esprit de corps*, and altogether the movement has proved much more successful than even favourable critics, judging from theory, could have foretold. Leaving aside as irrelevant the question whether the money might or might not have been better spent otherwise, I do

not think that any impartial observer, with knowledge of the subject, will deny that in the Volunteer Force of Great Britain the Imperial Government has got and is getting full value, and more than full value, for its expenditure.

Before considering why it is that the Government of India has not been equally fortunate, we may as well consider what the Government of India wants. For this purpose I shall assume that, from the time when the mutiny was suppressed and order restored, the policy and aims of Government in its dealings with the volunteer force have been continuous. The question is—

Has the object in view been—

- (i) to encourage persons of European birth or descent to practise shooting and the use of arms. To furnish such persons with arms, and thus to enable them, in the event of internal disturbances in the country, to defend their own lives and the lives of their families; or
- (ii) to organise a second line of defence. To utilise the material ready to hand, in the existence of numbers of citizens interested in every way in the maintenance of British supremacy, for the formation of effective military units, capable of concerted military action, to whom, in emergencies, (such as the unavoidable depletion of British garrisons or disaffection in the native army or police, jail outbreaks, riots, and the like), the duties of restoring order and the *general* protection of the lives and property of loyal subjects could and would be wholly or in part entrusted.

The late Mr. C. T. Metcalfe, in the Translator's Preface to a recently published book, "Two Native Narratives of the Mutiny in Delhi," remarks that the Government of India has, occasionally with disastrous results, always favoured the policy of "the middle course." Probably, in its dealings with the volunteer force, its actual policy consciously adopted, if any, has been directed towards an object midway between the two which I have suggested above, and combining some of the elements of both. With the exception before noted of two or three well-known corps, I do not think it can be claimed that the result, as exemplified in the volunteer force of to-day, is appreciably in advance of the first of these two objects. As a volunteer officer, I need hardly say that I wish I could think otherwise.*

If this view be correct, *i.e.*, if the first of these two objects only has been attained by the force at large, it could have been done much cheaper without any more military organization than is required in a Swiss or German rifle club. All that would be necessary would be for Government to issue rifles and ammunition to the committees of clubs, send round a few travelling instructors of musketry, offer series of

* As stated at the beginning of this paper, my opportunities of personal observation have (in India) been limited to one province (not one corps). I should be delighted to be convinced that the opinion above expressed is incorrect.

prizes, and contribute towards or entirely maintain ranges. If enough small prizes were offered and the thing were recognized officially, Eurasian clerks and others would probably be more willing to devote their spare time to shooting than at present they are to shooting *plus* drill.

The average man at Home, when aware of the existence of the Indian Volunteer Force at all, probably thinks of it as if the second object which I have suggested above had been attained. We are always being told that the tendency of Parliament now-a-days is to interfere directly more and more in Indian concerns. There is therefore the danger that, the volunteers being regarded as a real military force, their existence may be quoted as an argument for the reduction of British garrisons when the pendulum swings towards retrenchment. In that case the Government of India would indeed have a bad bargain.

I shall call my "Object (ii)" the Second Line of Defence plan. It represents, in my opinion, the ideal towards which all the efforts of the Government of India in maintaining an auxiliary military force should be directed. If all the conditions had been favourable, this Second Line of Defence would now be "in being." But all conditions never are favourable. Let us see why the idea has not been realised.

In the first place, there is no reason to suppose that we should have an ideal volunteer force, even if every man in India who wears a hat were of pure English descent, or even birth. The volunteers of England and Scotland, the best military force in the world, not called an army, exist, because, given an enormous population of Anglo-Saxons, there will always be a small proportion who have certain military ideas, who possess, in a word, the characteristics which make that force what it is. It is easy to work out the proportion. In India, this first condition—population of Anglo-Saxons—does not exist, even if you include in the term Anglo-Saxon every person who has any English blood at all.

Secondly (and though this may at first sight appear part of the same condition, it is in reality quite separate), the bulk of the men available in India are Eurasians. I do not intend for a moment to say that Eurasians are useless from a military point of view. The records of the mutiny show the contrary. Also I know my Kipling and my Steevens. I know what miracles Sergeant Whatsisname can perform, *with real power and discipline to back him*. But, given an organization with no real power or discipline, with (in practice) no penalty for slackness or inattention, and men who are often only half willing and oftener unwilling, and even that strong man and wizard must fail. Something he can do, and does. With an adjutant and an officer or two to help him, by a little bullying when that is safe, a little humouring when it is not, a little blindness, and a great deal of tact, Sergeant Whatsisname can turn you out volunteers who manage to get through the little that is expected of them at an annual inspection without open disgrace. The General makes a few complimentary remarks, the Commanding Officer tries to look as if he knew all about it, the working officers and men smile grimly, the duffers feel pleased with themselves,

and the inspection is over. The shirkers breathe sighs of relief as they take off their belts for another eight months, and the public—that small portion of it which in India takes enough interest to look on for twenty minutes—goes home with the idea that the Volunteers are perhaps not such a bad lot after all. What the adjutant thinks, and what Sergeant Whatsisname says to a confidential friend as he wipes his moustache after a drink, can only be guessed at.

An English or Scotch volunteer corps possesses just that modicum of discipline which is enough to keep it together and make every man do his best. The power which bestows this discipline is the instinct to act together for a common object, to subordinate oneself for the common good, which gave the world Parliamentary Government and is destined to make the Anglo-Saxon master of the earth.

Condition No. 2, the instinct of discipline (to use the word in its elementary sense) without compulsion, is absent in India.

If another reason for our not having an ideal force be required, I think it may be found in the fact that Government, and by consequence the public, has not taken the Volunteers seriously—a state of things which continually reacts upon itself. There is nothing within the scope of human endeavour which the Government of India cannot do if it “has a mind.” The miracles of organization which are the commonplaces of British rule and which wring reluctant praises from foreigners who are unable to disbelieve in them, are performed with such ease that the servants who do the work scarcely realise the magnitude of their task. To put the matter plainly, if Government had given serious attention to the creation of an efficient auxiliary force under any name, either such a force would now be in existence, or the attempt, having started on the (in my opinion) unsuitable lines of volunteering at Home, would have been given up, and the Rifle Club plan would have been adopted instead.

“But,” it may be objected, “if Government has *not* given serious attention to the matter, it is evident that it does not want your ideal force. That being the case, what is the use of all this discussion, and what useful conclusion can be arrived at?”

I answer that, in my opinion, the time has come to set our house in order. Anyone who can read must be aware of the great drawing together of the scattered factors of the Empire which has gone on quietly during the last two or three years. Within the last few months the movement has accelerated, and it is not unlikely that the new century may dawn upon the great dream realised at last; the Empire become one living and conscious organism, all its forces correlated and co-adjusted, invincible and impregnable, the greatest engine for good that the world has ever seen.

But whether this be so or not, we may take it as certain that the process of consolidation will continue. No part of the Empire will be allowed to remain unprovided with an efficient auxiliary military force. All the colonies have been working for years with this object in view*

* Since writing the above, I have read Lieutenant Cecil Lamb's Article on An Australian Federal Army in the October or November issue of the Journal of the Royal United Institution. It bears out what I say of the Colonies.

India must not be behind-hand, and the sooner Government takes the matter in hand the better. It was noticeable on the occasion of the Royal Jubilee Procession in 1897 and has often been remarked since, that of all the dependencies of the British Crown, India, first and most valued among them all in so many respects, is almost the only one without an auxiliary military force which has been officially and publicly recognised in England. For my part, I should not be surprised to hear that the Volunteer Force is even now being weighed in the balance, and that the question of reorganization on a new basis is engaging the attention of responsible authorities. That the matter will have to be considered and the difficulty faced soon, I am convinced, and it is in this conviction that I propose to offer the outlines of a scheme of reorganization.

Proposition 2.—That the present condition of things is remediable, but only by a complete reorganization of the whole system.

I have shown already that the two main conditions necessary to the existence of an efficient volunteer force, organised and administered on the same lines as in Great Britain, are absent in India. The first was—requisite population of Anglo-Saxons ; the second—the instinct of discipline without compulsion.

The absence of these conditions is not a bar to the creation of an efficient auxiliary force ; but it is a bar to the efficiency of that particular *kind* of auxiliary force called a volunteer force.

Sixteen years ago, before the Australian Colonial Military Forces had been brought up to anything like their present satisfactory standard, there existed in one of the colonies two separate and distinct military organisations. One of these was located at the capital, and was known as the Local Military Force. It consisted of artillery (garrison and field), cavalry (called mounted rifles and armed like dragoons), and infantry. The individuals of this force were called volunteers, but they were so only in the sense that every British soldier is a volunteer, *i.e.*, that enlistment was voluntary. They received pay, at the rate of 5 shillings per diem, for each infantry private. The pay of the artillery was the same. Troopers of the mounted rifles drew, I think, 7 shillings and 6 pence, and every man had to own his charger. Of course, pay was only received for those days when the men were on duty, and the full pay only for a field day or during the annual camp of instruction ; ordinary drills counted as half a day ; officer's pay was calculated on the same basis. The officers were appointed by the Governor. The uniforms were practically the same as for regular British troops, with white helmets for all arms. To the rank and file clothing was issued free on a regular prescribed scale ; officers were granted some form of assistance towards cost of uniform, I forget the details. The force was not a large one : the infantry had, I think, only one battalion ; the field artillery six guns ; the cavalry, some fifty sabres. But there were scores of old soldiers in the ranks, the officers showed a sufficiency of zeal, and altogether the force was a working military body, with discipline and flexibility. The nominal standards of efficiency were those of the volunteers

in England; they were rigorously enforced. The law gave certain powers and penalties, but it was seldom that recourse was had to the law; the fear of losing pay kept the men up to the mark.

The other body was known as the Volunteer Military Force. These were scattered in companies about the country districts. They were little more than shooting clubs in uniform (blue serge). They elected their officers, drew no pay, and paid for their uniforms. They had capitation grants, and were, in short, organised on the ordinary British volunteer basis. They were supposed to be of higher social rank than the red coats, but personally I could never detect any superiority. I have often seen Sir C—— K——, then Attorney-General, and now, I think, Premier of the Colony, doing duty as Corporal in the L. M. F.

Both Forces were nominally under the command of a British army officer of full colonel's rank, seconded as local major-general with the title of Colonial Commandant, and paid by the colony. In practice, the Commandant saw hardly anything of the Volunteer Military Force, excepting the single company located at the capital.

In all points of military efficiency, with the solitary exception of shooting, in which they were very good, the V. M. F. were little, if at all, superior to an average Indian volunteer corps. (Of course I also except the fact that they were all white men. The unsatisfactory term "European" is never used in Australia, and besides, a large proportion of the V. M. F. were of colonial birth.)

This double system, with a few unimportant changes, had been in existence for a good many years. It was generally acknowledged that the local military force was a more efficient military body, but the other was supposed to be more suitable to the democratic spirit of the country.

The news of Lord Wolseley's Nile expedition, and of the instantaneous offer of troops by the Government of New South Wales, and a magnificent speech by the late Mr. Dalley, then Premier of that Colony, sent a wave of patriotic feeling over the whole Continent, which was intensified by a Russian "war scare." Coast defences were seriously taken in hand, Ministers of Defence were appointed, and each colony enrolled a body of regulars, under the name of Permanent Artillery. In the colony of which I am writing, the L. M. F. was given the more appropriate name of militia and received a large accession of strength. In the more populous up-country centres, additional companies of the militia were formed, largely by transfer from the volunteer military force, which was now called distinctively the volunteer force. The mounted portion of the militia was also augmented, and divided into mounted infantry and (in imitation of the celebrated Sydney regiment) lancers. Mounted infantry had proved their usefulness at both ends of Africa, and it was found possible to raise companies of this arm in the country districts of the colony which, when properly trained, were perhaps without their equal in the world.

The defence system of the colony has been developed along these lines. The Defences Act, 1895, abolished the volunteers altogether;

N

the term militia was also discarded, and the whole of the military forces of the colony were brought under three designations—

(1) Officers and Soldiers Permanently Employed (quondam "Permanent Artillery").

(2) The Active Military Force (quondam Militia).

(3) The Reserve Military Force (quondam Volunteers).

All of these are paid. The rates are as follow :—

Permanently Employed—

Officers as prescribed.

				s.	d.	
Sergeants	5 9	per diem.
Corporals	4 9	"
Gunners	3 9	"

Active Military Force—

				s.	d.	
Lieutenant-Colonel	15 0	per diem.
Major	10 0	"
Captain	7 10	"
Lieutenant	6 0	"
Sergeant	5 10	"
Corporal	5 5	"
Bombardier or Lance-Corporal	5 0	"
Trooper, Gunner, or Private	5 0	"
Trumpeter, etc., under 18 years	2 10	"

Reserve Force Half above rates.

There is a schedule of war rates, in which the above are largely increased for calculating pay.

A day=5 hours and upwards.

A $\frac{1}{2}$ day=from 2 to 5 hours.

There are also Defence Rifle Clubs, supplied with arms by Government and coming under the Regulations for shooting purposes.

My object in inserting the foregoing extract from the military history of one of the British possessions has been to show that, where the Anglo-Saxon population is small, it is necessary, for the creation of an *efficient* military force, to have recourse to a system fundamentally different from that upon which the Volunteer Force of Great Britain is raised. Without going into the question of the relative density per square mile of the population of Great Britain and an Australian colony, it is sufficient for my purpose to show that when a military force, as distinct from a congeries of uniformed rifle clubs is required, it is necessary, unless your population is enormous, to adopt the militia system. I take it that, supposing the population, say of Wales, were to be suddenly reduced by a quarter of a million, the number of recruits

for the army and the number of volunteers which we get from Wales at present, would be automatically reduced in the same proportion. If the population were still further reduced, the number of men who want to be regular soldiers and who want to be volunteers would decrease again, and so on until the point was reached when the militarily inclined Welshman would vanish entirely, leaving a residue of population, still numerous, who would not voluntarily produce any military force at all.

In the special circumstances of an alien race in India, we have in one way or another forced up the total of our volunteers, until their numbers, as shown on paper, bear a vastly larger proportion to the European population from which they are drawn than do the numbers of the volunteers at Home to the Home population. Probably, by an exhaustive process of selection, the Biblical parallel to which will at once suggest itself, it would be possible to finally arrive at the sound and useful remnant of our paper battalions. The number of these righteous ones would—or I am very much mistaken—prove to bear the same or nearly the same relation to the number of Europeans in India as does the number of good volunteers in every other country where the volunteer system is in vogue to the population of that country. That is to say, that, in India, there would be nothing left but a weak brigade, with (I try to hope) an unduly large number of officers.

Relative strength of Volunteer Forces in Great Britain and India.

—	1897. Number of volunteers returned as efficient.	Male population. (Census, 1891.)	Percentage of volunteers to population.	Cost.
Great Britain	(a) 263,963	15,995,618	1·65 p. c.	£ 614,200 (c)
India ...	27,000	(b) 325,465	8·29 p. c.	Information not available.

(a) Includes staff.

(b) Male Christian literates. Ref. Whitaker's Almanac. This includes children and of course many adults not eligible as volunteers. On the other hand, the population under this head must have largely increased since 1891.

(c) Army Estimates, 1898-99—Volunteers.

Observe, I am far from saying that the men who would form my imagined remnant are the only material available for the formation of the militia.

Once let the force be imbued with discipline—the most potent agent for that end in the new organization being the power of the purse,—and two-thirds of the men, who are now indifferent volunteers, will become material from which excellent Militiamen can be made. Our Volunteer Force is a failure, not from want of material, but because it *is* a Volunteer Force. Those who say (if there be any such) that the Eurasian is useless, and can never be anything else, speak thoughtlessly. Does any thinking man believe, for instance, that an Eurasian, even of the third or fourth generation,—that any human being, with a strain of English blood in him, is not the superior, as he stands, of an Egyptian Fellah? The Fellah of 1885 was the scorn and outcast of the world—a byword for cowardice and hopeless inefficiency. The Fellah of 1898 was the victor of Firkeh and Omdurman—thanks to discipline and Sergeant Whatsisname and British officers.

Take the Chinese, again. It is perhaps early yet to speak with confidence, but does anyone doubt that in a few years the regiment of Wei Hai Wei, though it be recruited from among the rabble who ran like hares from the Japanese rifles, will be fit to fight any enemy it may have to face? And shall we for a moment acknowledge that these fellow-citizens of ours, of our own blood and speech, are inferior as raw material to the men of the Nile or the Yangtze? I should be ashamed to make such an admission, at any rate, until the experiment has been tried. Depend upon it, the greater number of the men who now only aim at nominal efficiency, avoiding marches and field days, resenting admonition, and only kept on the rolls at all by worrying and coaxing, would, under the other system, feeling that they were doing something worth paying for, and that they were really and truly a part of the strength of the garrison of India, develop into smart and useful soldiers.

And this transformation is to be effected—how? Briefly, by a change of name, and by paying money for value received. After all, there are few things in this world that are worth having that have not to be paid for in hard cash. The work done by the British volunteers (I find myself continually obliged to recur to the mention of that anomalous body) is, by a freak of nature, as it were, an exception to the rule. Describe the thing to an intelligent Frenchman or German who has never been in England; tell him that there are several thousand men in London, for instance, engaged in all kinds of civilian employment for their living, who not only voluntarily spend many of their evenings and most of their holidays in the various departments of military training, and, many being of gentle birth and breeding, take pleasure in camp life as and alongside “common soldiers,” but actually pay—pay pounds sterling in entrance fees and subscriptions—for the privilege of wearing a uniform and doing these things! You will have some difficulty in persuading the intelligent foreigner that you are not lying or joking; and when you succeed in this, he will certainly,

even if too polite to say so, go away more convinced than ever of the eccentricity (to put it mildly) of all Englishmen. To go further yet, and explain that the force thus created has reached the stage when it is officially and publicly recognised as part of the army, and allotted its place in the scheme of defence of the country, would be an additional strain upon your friend's credulity and manners.

The principle of payment once established, there would be little difficulty in organizing a force which, in a few years, would become a thoroughly efficient militia. To begin with, there would be actual competition for enlistment, instead of the shirking that goes on now. A fairly strict medical examination, with prescribed standards, would have to be passed. The physically unfit would be relegated to join rifle clubs if they cared about shooting.

We should be able to pick and choose among the best competitors for non-commissioned officers. The corporals and sergeants ought to be the backbone of a corps, and with every development of fire discipline the demands upon them increase; but at present so great is the distaste for stripes and any sort of responsibility, that I have known men, naturally smart, affect slackness rather than be promoted. The result is, that as there must be some non-commissioned officers, a few greybeards—who "joined when the corps was first started, Sir," and who think they ought to be promoted, have to be made corporals and sergeants.

Given a good sergeant-major and good sergeant instructors (and, in my experience, they mostly *are* good), if you have besides a set of non-coms. who know their work and will do it, the business of licking a corps into shape is a mere matter of attendance. And attendance, or rather non-attendance, is about the most heart-breaking difficulty that a keen volunteer officer at present has to contend against. If men will "turn up" to drill, they may be careless, stupid, even inattentive; he feels that at least they are giving him a chance. He feels that he is doing something, and it may be learning something—patience at any rate—when he has his men on the ground and can talk to them. But when, after all his adjurations and their promises, they calmly stay away, he feels heavily scored off.

Now the Indian Militiaman would not stay away for the absurdly simple reason that if he did, his pocket would suffer. Hardly a man would willingly forego the little addition to his monthly income that each half-day's militia pay would bring.

My proposal is, then, that the present Volunteer Act be repealed and an Act passed constituting a force to be called the Indian Militia. This force to consist of active and reserve branches; members to be sworn in and to engage for a fixed period of years "with the colours," at the end of which they would have the option (if physically fit) of re-engaging or passing into the reserve. All ranks to receive pay at rates to be prescribed for the time actually spent by them in military training or duty, the number of hours equivalent to a day being laid down. Pay of reserve to be half that of active branch. A compulsory minimum

number of day's training per annum to be fixed to include (for active branch) not less than seven days' continuous training in camps of instruction. *This to be rigidly enforced.* Uniforms, equipments, and arms to be substantially the same as for British regular troops. Grants-in-aid of cost of uniforms to be made to officers on first appointment being confirmed.

Officers to be nominated by Local Governments on probation for one year or two years. Such period to include not less than three months' duty attached to regular regiments. An examination to be passed, according to a prescribed standard, during period of probation. Bangalore to be open to militia officers, and certificates from there or from Hythe to be a necessary qualification for promotion to captain's rank after the force has been a certain time in existence. Travelling for purposes of militia training or other duty to be at the public expense.

It will probably be found better to have only one corps of militia infantry (including Mounted Infantry) for each province or presidency, such corps to be divided into administrative battalions according to circumstances.

After a certain number of years from the formation of the force, seconding of regular officers as adjutants would cease, and adjutants would be selected from among militia officers.

A selected regular officer to be appointed Inspector-General and to devote his whole time to the work of that office. He would be responsible to Government for the efficiency of the force as a whole. In each province or presidency there would be a Deputy Inspector-General, also a regular officer. The Inspector-General and the Deputy Inspector-Generals would have each a Personal Assistant who would ordinarily be a selected militia officer. The cost of this staff would probably be less than the total expenditure on the present volunteer adjutants.

The suggestions I have made are not intended to be more than outlines. The first step would be the deputation of a suitable army officer, assisted by one or, perhaps, two volunteer officers in Government service, who, after collecting all needful information, would prepare a report and draft a scheme containing all the necessary details for the information of Government. It would probably be found very advantageous to visit several colonies and make notes of their defence systems, with a view of preparing a scheme which would, in course of time, become part of the general scheme of Imperial Defence.

THE BATTLESHIP : A STUDY IN EVOLUTION.

BY CAPTAIN B. SETON, I.M.S., 1ST CENTRAL INDIA HORSE.

'So careful of the type ?' but no.
From scarped cliff and quarried stone
The cries "A thousand types are gone."
I care for nothing, all shall go."

The Battleship of 1899 is the last stage in a conflict that has continued without intermission for the last half century between gun and armour, offensive and defensive contrivances, penetration and resistance.

In terms of Biology, it is the survivor of types, each of which, under the influence of natural selection and the struggle for existence, has resulted from changes of environment; the weaker has inevitably been succeeded by the stronger type; and unstable though even the latest stage attained may be, we see in its structure the developmental processes through which it has passed and the various conditions which have determined those processes.

There is a popular idea that the gun can only appeal to the gunner, the machinery to the engineer, and the Battleship as a fighting unit to the naval strategist; while to the layman the whole is only of academic interest, except in so far as it represents a no inconsiderable item of the sum total which as a tax-payer he is annually called upon to meet. To a certain extent there is truth in this. The relative merits of Harveyed or Krupp steel in the construction of armour plating, or of the wedge or interrupted screw system for the breach of a gun may afford opportunities for endless discussion to the Artillerist; wordy warfare may rage round the Belleville boiler in the most decorous assembly of naval architects; but outside the class of specialists little interest is likely to be taken in any of these questions. To the student of military history, however, the Battleship represents considerably more than a collection of highly complex and specialised machinery; he sees that each successive change in its structure has been a function of an advance towards perfection of one or another engine of destruction, and that for this reason the history of the Battleship is practically the history of Modern Armaments. That every practical application of modern science enters into her construction goes without saying; but it is from the point of view of the evolution of a fighting machine that it is proposed in this paper to re-trace the steps which have culminated in H. M. S. Majestic of 1899. And as the history of the navy from the earliest times has no immediate bearing on the question, it will suffice to make a commencement with a brief consideration of the Battleship about the time of the Crimean War.

The modern Battleship may be said to date from the introduction of the Shell as a projectile. The bomb, filled with powder, is said to date back to the year 1495, and to have been used by the Turks in 1523. The value of Shell was, however, first proved by the Russians on a large scale when they employed them against the Turks in the naval action at Liman in 1788. To quote from Captain Garbett's "Naval Gunnery": "the destruction of the Turkish fleet was entirely due to their use. Sir S. Beutham, the distinguished naval architect and engineer, was at that time in the Russian service; he mounted a number of long 36-pounder and 48-pounder howitzers on non-recoil carriages of his own invention in barges, and with these the Russians made their attack on the Turkish squadron, shelling them at a range at which the Turkish guns were apparently useless. Ten ships of the line were set on fire and blown up, another was sunk, and of the eleven crews numbering some 10,000 men, only 3,000 were saved."

From this time Shell came into general use, and the French ships employed them throughout the Napoleonic Wars; but, owing to the extreme danger which attached to their use, they were not taken into the British service for a long time. In 1824, Colonel Paixhaus invented and introduced the "canon-obusier" or shell gun, which was destined to revolutionise naval construction, and which by its adoption in principle by other powers led to that long struggle between ordnance and armour which has continued ever since. In 1838, we finally adopted the 65 cwt. 8-inch shell gun, and at the outbreak of the Russian War it was in general use in our service.

In November 1853 the Russians again attacked and destroyed a Turkish fleet off Sinope with shell fire, and reduced a large part of the town to ashes. Here again the vessels of both fleets were entirely wooden; and although much may be ascribed to the superiority of the Russian marksmanship, their success was undoubtedly chiefly due to the immense destructiveness of their shell as compared with the solid projectiles of the Turks.

It was abundantly evident, therefore, that wooden ships stood no chance against well-directed shell fire; and this was impressed so strongly on the allied powers in the bombardment of Sevastopol that both France and England took steps to introduce some sort of armour which should diminish the vulnerability of their vessels, and enable them to take a part more active than that of merely blockading the entrance to the Harbour.

To shell fire then was due the introduction of armour. It is impossible now to be certain to whom is due the credit of the idea of plating war ships with iron as a defensive measure; it probably originated in the United States, but it was certainly revived by Napoleon III, and resulted in the construction at Brest in the early months of 1855 of five "floating batteries" plated with 4½ inches of iron with a stout backing of oak. The hastily completed "Tonnante" and two of her sisters arrived in time to take a most important part in the bombardment of Kinburn

in October 1855. To quote again from 'Naval Gunnery': "anchored some 800 yards from the main fort, their heavy guns played with crushing effect upon the Russian works, while the storm of shot and shell showered upon them by the Russians produced absolutely no effect."

The *Tonnante* and her sisters, then, and our own "Erebus" and "Terror" mark an important stage in the evolution of the Battleship, for now, for the first time, shell fire had met its match in armour.

A digression is here necessary to briefly indicate the progress of Steam in the navy. As long ago as 1821 the "Comet" had been fitted with paddle wheels, and by 1840 steam was so well established as a propellent for ships of all sorts that there were already some 40 wooden steam ships in the navy. Horse-power increased as the steam engine improved, and in 1843, the 46-gun frigate "Penelope" was lengthened, fitted with the newly introduced tubular boilers and engines of improved type and 650 horse-power. Meanwhile the system of screw propulsion had come in in the mercantile marine, and was making rapid headway; and as an experimental measure, a screw was fitted to the "Rattler" in 1841. Trials proved the superiority of the screw over the paddle wheel as a propellent; and a further advantage became obvious in the fact that the engines could be kept so much lower down in the ship, and were consequently not exposed to anything like the same extent to an enemy's fire. For many years the engines remained horizontal; but with increased protection, and the introduction of watertight compartments, the vertical position became possible, and has continued to the present day.

With this brief statement the development of the engines of a battleship must be left, as they offer far too wide a field to make their consideration profitable in a paper such as this.

The screw then having been adopted, large numbers of wooden ships in commission or on the stocks were converted into steamers; so that when the Crimean War broke out, we possessed a powerful wooden steam fleet; and from this time onward ships propelled by sail power alone were obsolete for war purposes.

To sum up, at the close of the Russian War our battleships were still wooden, but a considerable proportion of them had been converted from sailing into steam vessels. The effects of shell fire, however, as experienced in the war, had sounded the death knell of wood in naval construction, and the Iron age had commenced with the triumphant introduction of the plated "floating batteries" by the French and ourselves.

The time had, clearly, arrived for a re-consideration of the whole question of Battleship construction.

The admiral was roused to action by the launch in 1859 of the French ship, "La Gloire." This ship was plated all over to 6 feet below the water line with 4½-inch iron armour; and her engines gave her the then phenomenal speed of 13½ knots. As iron had already come into use in the construction of merchant shipping, it was decided to commence an iron

ship, built on the lines of a frigate, and armoured in addition with thick plating.

This was done, and the "Warrior" was launched in 1861. As she was the first of modern Battleships, this vessel is deserving of notice. She had a

The "Warrior," 1861. displacement of 9,200 tons, and indicated horse-power 5,470. She was 380 feet long; her armour, $4\frac{1}{2}$ inches thick, extended over about 200 feet of her sides, from the main deck to 5 feet below the water-line. At the ends of the armoured part were transverse bulk-heads; and in the space thus formed she carried 36 guns of the most powerful type in use in the sea service, *vis.*, the 68-pounder muzzle-loading smooth-bore. It is worthy of special note that outside the armoured central part, *i.e.*, for 85 feet of bow and stem, the "Warrior" was unprotected.

Here another digression is needful, to go back to the third of the factors which have determined the lines on which the Battleship has developed. We have seen that steam did away with the old sailing line-of-battle ship, and that the Shell was met by the introduction of Armour; it remains to trace the coincident change of type of the gun.

When France adopted the "canon-obusier," we had to follow suit; and in 1838, a 65 cwt. gun firing an 8-inch shell of 56 pounds weight appeared in

3. The Rifled Gun.

our navy. In 1850, the heaviest gun carrying a solid projectile was the muzzle-loading smooth-bore 68-pounder; and in the Crimean War these two guns were the best we had, and were in general use. But armour had come in; and by the end of the war it was believed that armour neutralised the gun.

Meanwhile the rifling of guns had advanced beyond the stage of theory. Cavalli, in 1846, had constructed a rifled breech-loading gun carrying a cylindro-ogival projectile, which created an immense sensation at its trials. Other guns on the same general lines speedily followed; and a few, rifled on the Lancaster principle, were actually employed in the Russian War. For some reason, however, probably prejudice, they were badly reported on and withdrawn. But in spite of prejudice and occasional failure, the rifled gun was destined to prove its superiority over the smooth-bore, and this was brought about by the introduction by Mr. Armstrong of his "built up" rifled breech-loading gun. It is quite impossible to enter here upon the peculiarities of construction of the built up gun, or to discuss the ballistic results obtained by it. Suffice it to say that experiments amply proved that the rifled gun with its elongated projectile must displace the smooth-bore; and once again the scale was turned in favour of offence as against defence, of gun against armour.

The Armstrong gun has had its vicissitudes; the breech-loading type originally introduced in 1861 in place of the smooth-bore was for one reason and another said to be unsatisfactory, and except for the smaller varieties of ordnance was withdrawn in favor of muzzle-loading guns,—rifled it is true, but still muzzle-loading; but the new principles of construction were adopted in all the rifled ordnance which now came in, and the smooth-bore gun rapidly became a thing of the past, and by 1864 may be said to have ceased to exist. For 15 years

the Admiralty adhered obstinately to their decision regarding the non-adoption of the breech-loading gun, and throughout this time the development of naval ordnance progressed on the lines of the muzzle-loader.

This however is anticipating, for the Battleship had not advanced beyond the type of the "Warrior" and her 11 sisters with their smooth-bore guns; and from this point the process of evolution must be taken up. In the American Civil War the confederates built an armoured ship of a new type. This ship, the "Merrimac," was originally a wooden steam frigate. At the fall of Norfolk she had been

The "Merrimac" and "Monitor," 1862.

set on fire by the Federals to prevent her falling into the hands of the enemy, and burnt down to the water-line. The confederates took her in hand as she lay, and erected amidships a closed heavily armoured battery or casemate, 170 feet long, in which were placed a large number of heavy guns, mostly of the new rifled breech-loading type. On march 8th, 1862, she attacked and sunk two Federal frigates, without herself sustaining any injury. But while the "Merrimac" was being hastened towards completion, the Federals were engaged in constructing another still more remarkable vessel with the express intention of meeting her.

This was Ericson's "Monitor." Like the "Merrimac," she was practically level with the water; but instead of a central battery, she had a central revolving turret, only 20 feet in diameter and 10 feet high, but closed in and very heavily armoured, and armed with two smooth-bore guns of the largest type.

The "Monitor" and "Merrimac" met in the most dramatic manner the day after the successful encounter of the latter with the Federal frigates. In spite of the fact that the "Monitor" was considerably the smaller of the two, the fight continued furiously for some hours, with no result, and both ships withdrew.

Here it may be remarked in regard to the turret of the "Monitor" that the idea of carrying all the heavy ordnance in a small revolving turret heavily armoured instead of having it spread along a broadside, as in the early "Warrior" type, or even in a relatively large casemate as in the "Merrimac," originated with Captain Cowper Coles, R. N.

The fight between the "Monitor" and the "Merrimac" had great bearings on all future naval construction.

The "Warrior" and her sisters, heavily armoured and formidable though they were, had great drawbacks, the significance of which now became apparent.

As from time immemorial had been the case, their guns were arranged along the broadside; effective end-on fire was therefore practically impossible; the vessels were necessarily lengthy and consequently unwieldy; and from their position the guns were of necessity limited in size,—for it is obvious that really heavy guns could not be carried in this manner; moreover, with the introduction of rifled ordnance and the increased penetrative power of the new elongated projectiles, the 4½ inches of armour which had been deemed sufficient protection against spherical projectiles fired from smooth-bore guns was quite inadequate

to meet the new conditions. Finally, inasmuch as the amount of armour, or indeed of any load, that a ship can carry is strictly limited and is proportional to her displacement, it was clear that the solution of the problem could not lie in indefinitely piling on more and more armour. The eyes of naval constructors then naturally turned to the two new types which had appeared in the Western Hemisphere, and from 1862 to 1877 development proceeded along the lines foreshadowed by the "Monitor" and "Merrimac."

Two schools thus arose which must be dealt with separately.

One school was in favour of the "Monitor" or Turret type, and a succession of ships of this type appeared, some of which are still in existence. The

Turret Ships.

The peculiarity of the class consists in their low free-board, that is, they lie very low in the water, and at a distance present little target to an enemy's fire except the heavily armoured turrets in which they carry their large guns. The earlier ships of the type were intended to be coast defence vessels, and for this they were peculiarly suited. The "Royal Sovereign" of 1862, the "Monarch" and the "Captain" were early representatives of the class. But, for a maritime power laying claim to the command of the High Seas, ships intended for coast defence alone were ships thrown away; and it was speedily found that the older turret ship was entirely unsuited to a sea way. Besides being slow and difficult to turn, they shipped water in huge quantities forward, and this in itself gravely compromised the fighting efficiency of their turret-guns; while the area commanded by their guns was extremely limited owing to the small elevation above the water-line.

In later ships of the class, especially after the loss of the "Captain," a higher free-board was adopted, but the compromise did not succeed, and with the "Devastation," "Thunderer," and "Dreadnought" of 1869-1872 the construction of this class ceased.

The other school, while avoiding the low free-board of the "Merrimac,"

adopted the central battery of that vessel.

Central Battery Ships.

The prominent feature of this type lay in the long armoured battery which occupied the central part of the ship, in which the heavy guns were carried, on the broadside. In addition to the central battery, there was a complete belt of armour running along the water-line, while the ends of the ship were left unprotected. The earliest of this class was the "Bellerophon" of 1866.

In later years, as guns became progressively more powerful, the armour was increased in thickness and power of resistance, until in the last built, the "Alexandra" and "Temeraire" of 1877, we find 25-ton muzzle-loading rifled guns, and armour 11 inches thick on the water-line.

Meanwhile rifled muzzle-loading ordnance had culminated in the

Citadel Ships.

production in 1878 of the 100-ton gun firing a 1,700 lb. projectile; and to meet the increase in weight of projectiles, it was decided that a re-arrangement of armour was called for. The inferior sea-going powers of the Turret type were against any further development in that line, and a modification

of the central battery known as the Citadel type came in. In this class the whole of the available armour (of the compound type, *i.e.*, wrought iron faced with steel) is concentrated on a central citadel or battery; and at each end of this citadel, enclosed within it is a turret. There is no water-line belt at all, but an armoured deck below the water-line affords some protection. The "Inflexible" and "Colossus" are specimens of this class. But before either of these was launched the conditions had again changed.

After 15 years of obstinate adherence to the muzzle-loading gun, the Admiralty was compelled to

4. The Breech-Loading Gun. recognise its mistake. The new type of breech-loading gun, and the introduction of slow burning-powder, gave results that could not be ignored; and experiments with the Armstrong 8-inch and 6-inch breech-loading guns finally established the incontestable superiority of the breech-loading over the muzzle-loading system, with the result that from 1880 the manufacture of the latter ceased. The adoption of the French "interrupted screw" breech action followed; and a few timely accidents with muzzle-loading guns did wonders in hastening the introduction of the new weapon. Large numbers of 6-inch guns were introduced on existing ships, and composed what is called the "Secondary Armament." The significance of this secondary armament will immediately be obvious,—for a new and still more disturbing factor had arisen, and the Battleship, which had so long been the sport of opposing physical forces, now had to face the torpedo.

As long previously as in 1871, the Admiralty had purchased the Whitehead locomotive torpedo; and as a

5. The Torpedo. corollary of the torpedo came the torpedo boat. The experience of the Russo-Turkish War of 1877 showed the possibility of a 10,000-ton Battleship being wrecked by a torpedo fired from a tiny boat running at 20 knots; and it became urgently necessary to adopt some measures by which the boat should be beaten off before she got within effective range. It was found that the big guns of the Turkish vessels could not be fired fast enough to afford a reasonable chance of hitting an advancing boat; while small arm fire was useless in regard to stopping power. The clue was thought to lie in the direction of the machine-gun which had been used with such deadly effect in the war of 1870. Nordenfeldt and Hotchkiss consequently turned out machine guns of small calibre firing a projectile of about one pound weight, and it was believed that a well-directed stream of these projectiles would stop the boat long before she would get within range.

But the machine gun was met by increased speed in the torpedo boat; and the device of placing her coal bunkers round her engines and boilers would enable her to advance in face of a shower of these small projectiles. So the machine gun increased in size to the 3 and then the 6 pounder; and finally the essential principle of the machine gun was applied to the breech-loading gun,—and the quick-firing gun was the result.

With the advent of the quick-firing gun completely new conditions had arisen. We have seen that a secondary armament of breech-loading guns and of machine guns had been introduced into existing battleships. It was evident that the breech-loading guns composing this secondary armament were more than capable of successfully attacking the unarmoured ends of the Battleship, while the machine gun would do frightful execution among the exposed gun crews in the citadels. So that the time had come when the disposition of armour must be again altered and a new form of protection applied to the guns themselves; and this necessity became imperative when the quick-firing 4·7-inch and 6-inch guns, firing projectiles of 45 lb. and 100 lb. respectively, came on the scene.

The torpedo then was responsible for the birth of the quick-firing gun, and both necessitated a new departure in naval construction; it is not surprising therefore that the Citadel type, with its unarmoured ends, was given up almost as soon as it was introduced.

Protection on the water-line, and room for a large secondary armament was called for; and a compromise was effected between 1886 and 1889 in the so-called "Admiral" class,—with the usual unfortunate results that attend compromises.

In these ships there is a return to the water-line belt along the middle $\frac{1}{3}$ of the ship's length; but the ends are unarmoured. The old turret is replaced by the "barbette"—a fixed structure in which the guns revolve on a turn-table—and the big guns, of 12-inch or 13·5-inch calibre, are of the breech-loading type; there is a secondary armament of 6-inch breech-loading guns (which have recently been replaced by quick-firing guns of the same calibre); but the defects are so obvious that the class can scarcely be said to be an advance on its predecessor. The secondary armament is totally undefended, and armour is lacking under the barbettes, so that a comparatively small projectile entering at this spot would wreck the latter. There are six vessels in the class, and powerful as they undoubtedly are, the cardinal defects mentioned render them unsatisfactory.

The defects of the "Admirals" were to a great extent corrected in the "Nile" and "Trafalgar" completed only in 1890. In these vessels there is a nearly complete water-line belt, with an armoured citadel, a pair of revolving turrets, and a second citadel above. These two vessels were an immense improvement on their predecessors; but the return to the turret was not satisfactory, as all ships carrying turrets are low in free-board; and this, as has been pointed out, not only interferes with their sea-going qualities, but limits the range and utility of their big guns in a sea way.

Finally, in the ships built under the Naval Defence Act of 1890, the Admiralty committed itself to the "Barbette" type.

It may be taken as roughly correct that to the "Barbette" type belong all our Battleships built since 1890. There are indeed several classes already in existence or building, differing from each other in dimensions, guns, and general details; but the type has persisted through the 10 "Royal Sovereigns," the 9 "Majestics," the 8 of the "Canopus" class, and in the "Formidables" which are still building; and as it represents the last stage yet attained in Battleship construction, a very brief summary will here be given of the comparatively lately completed "Majestic."

As regards offence, this vessel is well equipped; the "built up" breech-loading gun has given place to the so-called "wire gun" of 12-inch calibre; and of these she carries four. The loading arrangements are carried out by hydraulic machinery of the most perfect description, and the guns are trained on a revolving turn-table. Her secondary armament consists of twelve 6-inch quick-firing guns and a large number of smaller guns, ranging in size from 12-pounder quick-firing to machine guns of small calibre. There are also five torpedo tubes.

As regards defence, the ship relies for protection rather on side armour than on a water-line, belt. In her immediate predecessors the Royal Sovereign class there is a belt of 18-inch thick compound armour running for 250 feet out of their 380 feet length. This belt is 8½ feet deep, and is met at each end by 16-inch bulk-heads running transversely across the ship. On top of the belt is a flat 3-inch steel deck covering the ship's vitals; and at the ends of the enclosed citadel are the barbettes, themselves protected by 18 inches of compound armour. Below the barbettes and the turn-tables on which the guns revolve are heavily armoured tubes leading down to the shell rooms; these tubes and the position of the belt preclude the possibility that was seen to exist in the Admiral class of a comparatively small projectile bursting right under the barbettes. Finally, between the barbettes the broadside is protected by 3 to 5 inches of steel or nickel steel armour.

In the Majestic even this protection is improved upon; for, instead of a thick belt with thinner side armour on the top, there is a uniform thickness of 9 inches of Harveyed steel extending for 220 feet of the ship's length from 6 feet below to 10 feet above the water-line; and on this rests a curved steel deck, 4 inches in thickness. Harveyed steel is employed throughout in place of compound steel.

The barbettes are covered with hoods, which afford the most complete protection to the crews of the big guns; and the 6-inch guns are carried in casemates of 6-inch steel.

It is beyond the scope of this article to enter with any further detail into the structure of the Battleship. A description of the technical details of the engines and boilers, or of the wonderfully complex arrangements for loading and firing the guns cannot be attempted here. All this can be found in the numerous standard works dealing with naval construction and engineering.

At this point we must leave the Battleship. It is idle to speculate what new engine of destruction will arise in the next few years—or months—to again completely alter existing conditions. But the possibilities even on known lines are endless ; and by the time the class now building is in commission, it may certainly be anticipated that such new developments will again have demanded essential alterations in naval construction. The steam turbine, the melinite shell, even the submarine boat are in their infancy ; and, in spite of peace conferences and arbitration schemes, there is little likelihood that armour and gun will cease to exert their influence on each other,—and on practical politics, or that the Battleship of a few years hence will differ as much from H. M. S. *Majestic*,—the type whose development has been meagrely traced, as does that ship from the old “ *Warrior* ” of 1860.

BATTLES OF THE DECCAN.

BY CAPTAIN R. G. BURTON, 1ST INFANTRY, HYDERABAD CONTINGENT.

*II.—Argaum. **

The strategical operations which led up to the battle of Assaye were correct in design, and, on the whole, successful in execution. That Wellesley had to fight a battle the day before he expected it, and consequently, with only half his force, was due to false information, owing to the neglect of reconnoitring with his cavalry ; but the importance of this latter service does not appear to have been appreciated in those days.

The day was gained by the adoption of a bold initiative in attack by the British commander, by his brilliant tactics, and by the discipline and valour of his troops. It is, however, possible that, had Stevenson been present with his force, the victory would have been even more decisive. As it was, with the numbers at his disposal, Wellesley was unable to take up the pursuit of the enemy, who, although broken and disorganised, was not annihilated.

After the battle of Assaye, the scattered remnants of the Mahratta hosts fled to the north and there assembled. Wellesley was unable to move with his whole force. He had an extensive frontier to protect, and instead of receiving the assistance he had a right to expect from his ally, the Nizam of Hyderabad, he experienced nothing but passive, and in some cases active, opposition. The situation will best be understood from an extract from the British commander's despatches, dated at Adjunta, the 8th October 1803 :—

“ Scindiah and the Rajah of Berar, after making two marches westward along the Taptee, have turned to the southward, and, it is said, intend to pass the Casserbarry Ghaut. They have with them the greater part of their horse, some infantry, and some guns, which they got out of Burhampoor. They have sent into that place the remains of the Campoos (Regiments of Infantry).

“ It is possible that this movement may be intended to draw my attention away from Burhampoor and Asseerghur, and they may return to the northward upon finding that I do not follow them. On the other hand, these things called allied governments are in a state of deplorable weakness ; they depend so entirely on us for the defence of their own territories, and their power is so feeble over their own servants, who have so much connection with, and even dependence on, the enemy, that I have not means to move forward at once to Asseerghur with my

* Properly Argaon. But in the names of places mentioned in this paper, I have throughout adopted the time-honoured spelling.

whole force, although I know that, if I could take that step with safety, it would put an end to the war.

" But not one of the Soubha's forts is sufficiently garrisoned. He has not a soldier in the country except those belonging to the company ; and his Killedars and Amildars would readily pay the money they may have, just to be allowed to sit quietly in their forts and towns. As for the Peshwah, he has possession of his place at Poonah and nothing more ; and he spends the little money he receives upon the Brahmins, or upon women, rather than give any to his troops, or even to his menial servants.

" The consequence then of my proceeding to the northward with my whole force might be, that the enemy would get possession of, or levy contributions upon, some important place belonging to the Nizam, or they might move down upon Poonah itself. They would certainly stop our supplies, and the consequence of such a movement might be fatal to us. In this manner does the radical weakness of these governments operate against us. I have therefore determined to return to the southward, and to send Colonel Stevenson to Burhampoor. "

In accordance with this plan, Colonel Stevenson, on the 16th of October, entered Burhampoor without opposition ; and took the fort of Asseerghur on the morning of the 21st after a three days' investment. But it was not until the 25th October that Wellesley, who had been since the battle of Assaye like a man who fights with one hand and defends himself with the other, was himself enabled to assume the offensive, and co-operate with Stevenson against the still numerous forces of the enemy.

With this purpose in view, and having received information touching the movements of the Rajah of Berar, Wellesley marched southwards, and passed Aurungabad on the 29th. The order of march of the army of the Deccan is thus graphically described in Nicholl's Journal:—

" A body of Mysore horse, about four hundred, led the columns. At some distance the advanced-guard was followed by the cavalry, with the new infantry pickets marching in their rear. The line of infantry followed, and after them the park, store, and provision carts succeeded. The guns of the allies closed the line of carriages ; the ammunition and park bullocks followed them, with the rear-guard, consisting of the old pickets. A squadron of cavalry moved on the reverse flank, and another body of four hundred Mysoreans closed the line of march. Detachments of pioneers attended the leading divisions of the cavalry, advanced-guard, the line, and the park. Guides were sent every morning before the assembly beat to the heads of the cavalry advanced and rear-guard. The baggage (when practicable) was kept on the reverse flank entirely. The irregular horse of the allies marched on either flank, as most agreeable to the wishes of their leaders.

" Great care was taken to keep the line of march free from embarrassment. The brigadier of cavalry was ordered to halt whenever he exceeded the distance of three quarters of a mile in front of the infantry ; and the long roll for halting was beaten by any corps to whom an accidental stoppage occasioned a break of one hundred

yards. The roll was repeated from front to rear by every corps, until the squadron or battalion was ready to move again, when the taps passed along the line, and the whole moved forward."

In this order, then, Wellesley moved southwards. On the 8th November an armistice was concluded with Scindiah, the latter agreeing to remove to a position 40 miles east of Ellichpoor in Berar, and to keep at a similar distance from either of the British Divisions, Wellesley on his side consenting to suspend hostilities against Scindiah, and thus having a free hand to deal with the Rajah of Berar and to carry out the siege of Gawilgurh without interruption. The consideration which induced the British commander to agree to this suspension of hostilities are detailed in the Wellington Despatches. Judged by the light of subsequent events it would appear that he was over-cautious in this matter, but perhaps he did not realise the wholesome dread of the British arms which had been instilled into the Mahrattas by the battle of Assaye. However, the terms of the armistice were nullified by Scindiah, who, with his usual duplicity, failed to keep his part of the agreement and joined the army of Berar, which was under Manoo Bapoo, brother of the Rajah, at Sersooly, not far from the town of Akote, and some 40 miles to the west of Ellichpoor. Colonel Stevenson was advancing to invest Gawilgurh, and on the 25th November Wellesley descended the Rajoora Ghauts to co-operate with him. On the 28th Colonel Stevenson halted at Huttee Andorah, and next day effected a junction with Wellesley at the village of Paterley, some 8 miles to the south of Argaum.

The scene of the approaching conflict was the village of Argaum, to which the hostile force had retreated, a small hamlet embowered amid luxuriant gardens, and standing in a cultivated plain.

The plain is intersected by innumerable water-courses which drain the southern slope of the Satpura hills, and empty themselves into the Purna River, the stream which waters the fertile valley of West Berar. A few miles to the north, the alluvial plain is bounded by the forest-covered mountains, rising to a height of over 3,000 feet above sea-level, whose culminating peaks were crowned by three great forts, between Ellichpoor and Burhampoor—those of Gawilgurh, Narnala, and Asseerghur. These strongholds were in those days occupied by the Mahrattas; Asseerghur had already been besieged and taken by Colonel Stevenson, whilst the fall of Gawilgurh was to follow on the victory of Argaum. With the exception of Asseerghur, they have now been dismantled and have fallen into disuse. Their walls are crumbling into dust; some fine gateways remain, emblems of the past; a few old guns still lie rusting amid the rank vegetation with which they are overgrown, or rest upon the tottering battlements; whilst the sole inhabitants are the wild beasts that abound in the surrounding forest.

Approaching Argaum from the south, one passes through an area of unbroken cultivation, perhaps one of the richest cotton and wheat-growing districts in India. Through this country the British army advanced to attack the enemy's forces, which were drawn up in a line

5 miles long in front of the village, a force of 2,000 Arabs* being on the left, supported by some 50 guns, whilst Scindiah's army consisting entirely of cavalry, prolonged the line to the westward.

The small British force of infantry advanced in one line, the 74th and 78th being on the right, the cavalry in rear. The leading pickets were thrown into momentary disorder by the sudden opening upon them of fifty pieces of cannon, but they recovered and pressed on unbroken and undaunted, confident of victory.

The two British regiments were at once singled out and furiously assailed by the Arabs, who, after a discharge of grape, charged with fierce shouts, and only broke and fled after a sanguinary contest, in which 600 of their number were slain. These men constituted the backbone of the hostile force, for after their defeat the enemy made but a poor show of resistance, and were soon put to flight by the British cavalry. Evidently, having a lively recollection of Assaye, the Mahrattas had no stomach for the fight. The enemy was pursued for some miles, three thousand of the fugitives were cut down; all the cannon, ammunition, stores, and some twenty or thirty standards fell into the hands of the victors. The casualties on the British side consisted only of 46 killed and 295 wounded.

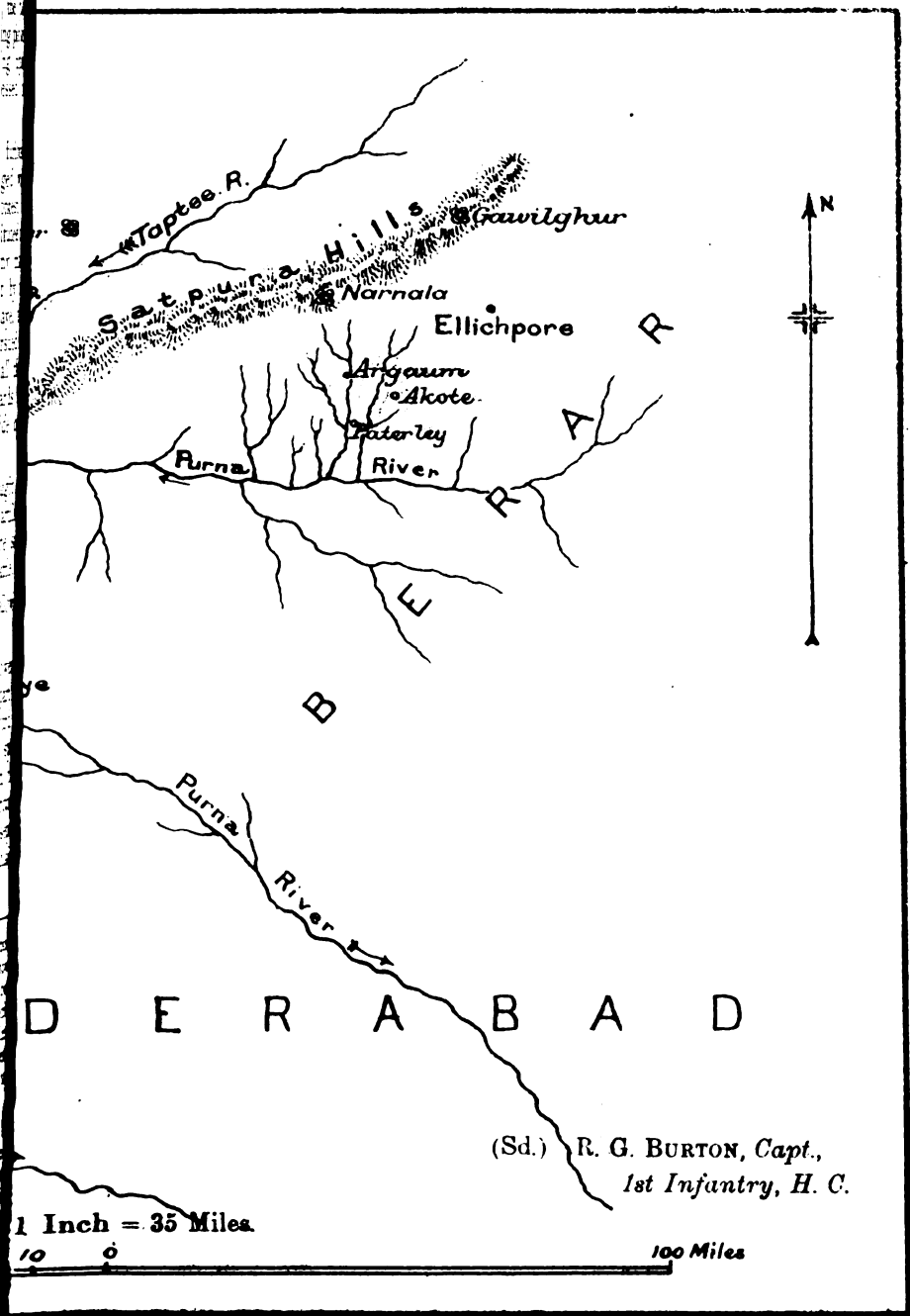
It is a curious fact that the native infantry, which had fought well at Assaye, was suddenly panic-struck when the enemy's artillery opened fire; they got into confusion, and broke away, but were soon rallied by the British commander, and again took part in the battle.

Colonel Welsh, in his *Military Reminiscences*, relates the following picturesque incident:—

"Lieutenant Langlands, of the 74th, was attacked by a powerful Arab, who, having thrown a spear, that cut through the fleshy part of the leg and stuck in the ground behind, rushed forward, sword in hand, to dispatch his intended victim. Langlands plucked the spear from the ground, and launched it with such dexterity in return that it passed right through the Arab's body, and pinned him to the ground. All eyes had been turned on the combatants, and a grenadier suddenly sprang from the ranks, patted the Lieutenant on the back, and exclaimed—"Well, Sir! Very well done!"

* Of the Arabs, Wellesley wrote as follows:—"I They are undoubtedly the bravest of all the troops I have yet seen in the service of the native power, and they defend the posts entrusted to their charge with determined valour, but I believe they do not serve willingly except in garrison; they are a high-spirited people, and by no means amenable to discipline and order, which is absolutely necessary should prevail in our camps and forts, and I believe that it has happened more than once in India that they have mutinied, even when treated well, and have been the cause of terror to their employers."

These remarks are interesting, and I believe the character of these people has not changed much during the century. Arabs are still employed in the service of the Nizam and some of the Nawabs of Hyderabad, but, as far as I know, no attempt has been made to enlist them in the British service. I have come across colonies of them in various parts of the Deccan, and they appear to be generally truculent scoundrels, feared by the peaceful villagers, but they certainly possess some soldierly qualities.



5 miles long in front of the village, a force of 2,000 Arabs being on the left, supported by some 50 guns, whilst Scindiah's army consisting entirely of cavalry, prolonged the line to the westward.

The small British force of infantry advanced in one line, the 74th and 78th being on the right, the cavalry in rear. The leading pickets were thrown into momentary disorder by the sudden opening upon them of fifty pieces of cannon, but they recovered and pressed on unbroken and undaunted, confident of victory.

The two British regiments were at once singled out and furiously assailed by the Arabs, who, after a discharge of grape, charged with fierce shouts, and only broke and fled after a sanguinary contest, in which 600 of their number were slain. These men constituted the backbone of the hostile force, for after their defeat the enemy made but a poor show of resistance, and were soon put to flight by the British cavalry. Evidently, having a lively recollection of Assaye, the Mahrattas had no stomach for the fight. The enemy was pursued for some miles, three thousand of the fugitives were cut down; all the cannon, ammunition, stores, and some twenty or thirty standards fell into the hands of the victors. The casualties on the British side consisted only of 46 killed and 295 wounded.

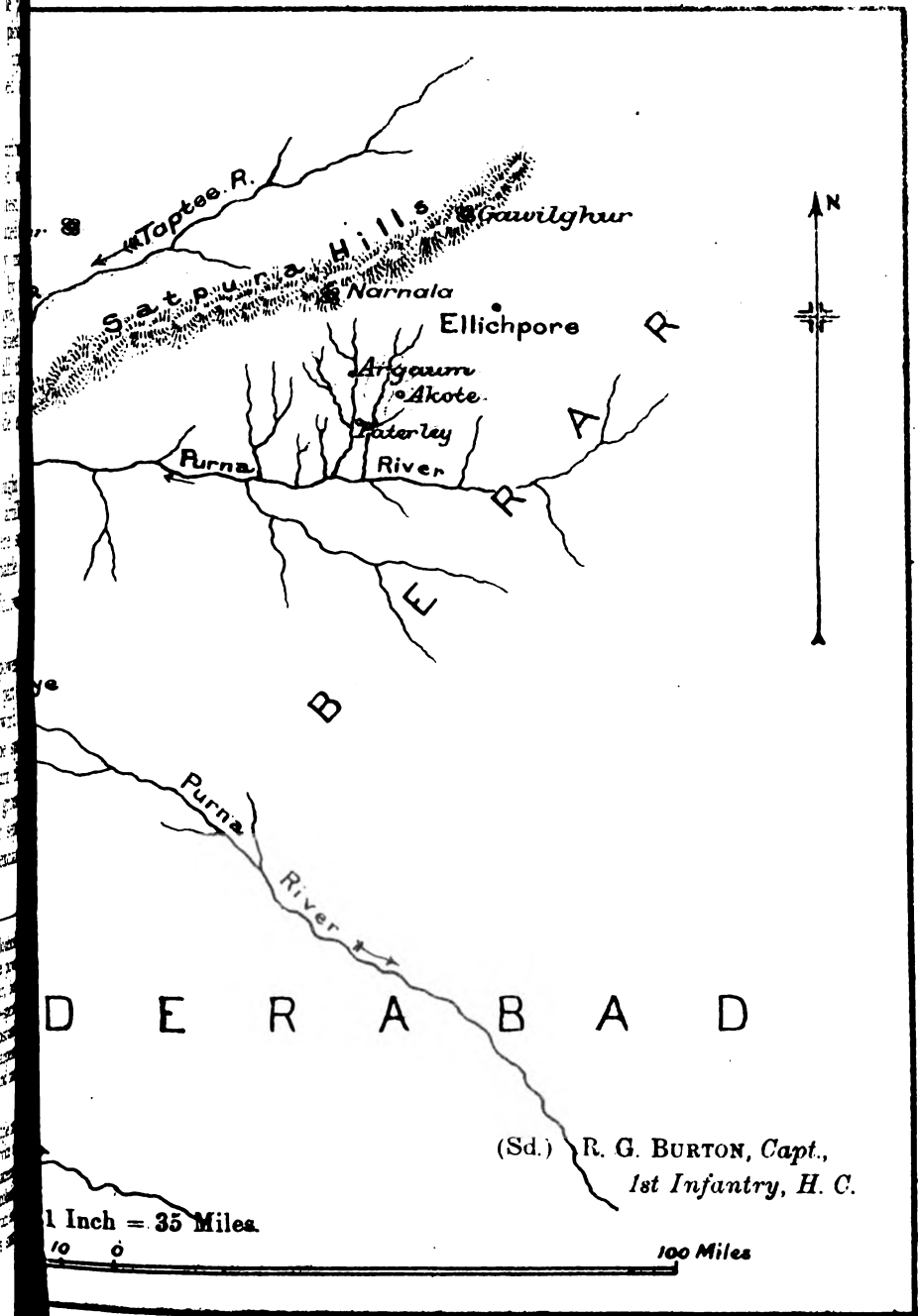
It is a curious fact that the native infantry, which had fought so well at Assaye, was suddenly panic-struck when the enemy's artillery opened fire; they got into confusion, and broke away, but were soon rallied by the British commander, and again took part in the battle.

Colonel Welsh, in his *Military Reminiscences*, relates the following picturesque incident:—

"Lieutenant Langlands, of the 74th, was attacked by a powerful Arab, who, having thrown a spear, that cut through the fleshy part of the leg and stuck in the ground behind, rushed forward, sword in hand, to dispatch his intended victim. Langlands plucked the spear from the ground, and launched it with such dexterity in return that it passed right through the Arab's body, and pinned him to the ground. All eyes had been turned on the combatants, and a grenadier sepoy, sprang from the ranks, patted the Lieutenant on the back, and exclaimed—"Well, Sir! Very well done!"

* Of the Arabs, Wellesley wrote as follows:—"They are undoubtedly the bravest of all the troops I have yet seen in the service of the native powers and they defend the posts entrusted to their charge with determined valour, but I believe they do not serve willingly except in garrison; they are a high-spirited people, and by no means amenable to discipline and order, which is absolutely necessary should prevail in our camps and forts, and I believe that it has happened more than once in India that they have mutinied, even when treated well, and have been the cause of terror to their employers."

These remarks are interesting, and I believe the character of these people has not changed much during the century. Arabs are still employed in the service of the Nizam and some of the Nawabs of Hyderabad, but, as far as I know, no attempt has been made to enlist them in the British service. I have come across colonies of them in various parts of the Deccan, and they appear to be generally truculent scoundrels, feared by the peaceful villagers, but they certainly possess some soldierly qualities.



Of the battle itself there is not much to relate. It is evident that the enemy had lost his spirit, and offered no such resistance as he did at Assaye. But the consequences of Argaum were none the less important, and the results of the victory were decisive. Gawilgurh was captured a few days later, and Scindiah was finally reduced to submission.

Wellesley's operations throughout the period subsequent to the battle of Assaye until the final defeat of the Mahrattas at Argaum were characterised by a certain amount of caution, but this was rendered necessary by circumstances which have already been detailed. His strategy throughout was brilliant. Himself occupying a strategical position covering the dominions of his ally, the Nizam of Hyderabad, he first despatched Stevenson to weaken the enemy by the reduction of his fortresses ; and then, as soon as circumstances enabled him to advance, recognising the main principle of strategy, that the objective of an army is the hostile force, and not any town or geographical point, he, by a skilful conduct of operations, including some "terrible marches, succeeded in stopping the enemy when they intended to press to the southward, through the Casserbarry Ghaut ; and afterwards, by a rapid march to the northward, in stopping Scindiah, when he was moving to interrupt Colonel Stevenson's operations against Asseerghur ; in which he would otherwise undoubtedly have succeeded,"* and finally arranged a junction with Stevenson almost in the presence of the enemy.

If the battle of Argaum appears a less brilliant feat of arms than that of Assaye, by reason of the enemy offering a less stubborn resistance, yet the events leading up to the final victory were characterised by a display of skill in no way inferior to the operations that preceded Assaye, and its results were of transcendent importance in completing the work commenced on the 23rd September.

* Wellington Despatches.

A NEW SYSTEM OF FIELD HOSPITALS AND AMBULANCE FOR HILL WARFARE.

BY M. CH.

FIELD HOSPITALS.

The experience of recent years has shown that a change in our field hospital system is necessary to make it suitable for mountain warfare.*

A brigade is accompanied by two field hospitals, divisible into eight distinct sections. If the brigade moves out for a ten days' march, it takes with it only ten days' supply of food ; but it cannot move a *single day's* march without taking, in the field hospitals, medical comforts for *three months*, an enormous supply of unnecessary articles, and *eight complete offices*. Even in the hottest weather it has to be encumbered with 400 blankets, not one of which is required. It takes two mule-loads of those antique lanterns which no one thinks of using. The eight offices alone require more than six mules, yet I believe that all the office records, that would be *really necessary* for the two field hospitals for a month, could be carried by a single porter.

Then there are *many places* in the hills in which fighting takes place where mules cannot be taken at all and *where the field hospitals cannot accompany the troops*.

The main points of the plan which I propose are three—

- 1st.—Divide the hospital equipment into (a) Indispensable ; and
· (b) Reserve.
- 2nd.—Have the Indispensable carried by porters.
- 3rd.—The Indispensable always accompanies the troops, but none, or only a part of the Reserve.

Each regiment now takes two field panniers on a mule. Instead of this, a regiment would take all the Indispensable articles of the panniers in two knapsacks of about 35 lbs. each on two porters.

For a brigade of four regiments and a battery there would be 10 porters attached to corps and 32 porters to carry all the articles that are really necessary for the two field hospitals.

This is, of course, only an approximate estimate, but I think that these 42 porters could take as large a quantity of medicines and surgical dressings as are carried now by the field hospitals and a *sufficient* quantity of medical comforts, such as brandy, condensed milk, and soup, etc.

* Sir W. Lockhart's Tirah Despatch ; Colonel Hutchinson's " Campaign in Tirah " ; Captain Shadwell's " Advance through Tirah " ; Captain Edwards in U. S. I. Journal for July 1898.

The equipment is now carried by about 105 mules with 35 drivers. The porters can keep up with the troops over any hills or snow, which mules could not do.

There are 13 medical officers in the brigade. Each would be accompanied by a porter, carrying an amputation case, chloroform, antiseptics, irrigator, dressing trays, antiseptic dressings, bandages, ligatures, etc., etc., everything necessary for ordinary operations. With the present system you cannot perform an operation on the march without unloading and re-loading a mule. If the mules are left behind, you have neither instruments nor lanterns to work with.

The other 29 porters would carry pills, tabloids, powders, brandy, condensed milk, and soup, splints, chloroform, antiseptics, dressings, bandages, etc., and about 14 good lanterns.* The medicines, when possible, in the dry form, made up in doses. The 42 porters could take quite as large a quantity of medicines and surgical dressings as are now taken by the field hospitals and panniers. They would also be able to take all that is really *necessary* for office work on the march.

With a commissariat and a post office I do not see that there is any more likelihood of running out of medical supplies than of running out of food.

It may sometimes be necessary to increase the number of porters taken ; it will often be possible to take less than 42 with the brigade when it goes out to fight. The same number of field medical companions and surgical havresacks as are now carried would be taken, either on the dandies, or by ward orderlies.

There is no necessity to organise a bearer column. This is bearer column and field hospital in one. Generally, in addition to the above, an operation table and tent would be carried by porters also.

According to the season, the country, the transport available, more or less of the reserve would accompany the column. In the hot weather blankets are not required. In the cold weather a blanket would be taken on each dandy and perhaps 50 besides. Tents for sick would generally be taken.

It would be waste of time to go into details until the system here proposed is adopted. Then a great many improvements can be suggested in all parts of the equipment and further alterations made to simplify the camp equipage and to diminish the transport for it.

The Indispensable personnel are the medical officers, assistant surgeons, hospital assistants, ward orderlies, perhaps ward servants, 8 cooks carrying cooking-pots, sweepers, ambulance train, and four spare porters.

The Reserve would be in charge of the commissariat by whom it would be forwarded, as required, like other supplies.

* And hand electric lights.

It would consist of medicines, dressings, milk, brandy, blankets, tents, etc., etc. The dressings would be in water-proof bags, not in boxes. With a cavalry regiment the Indispensable articles of the panniers would be carried in saddle bags on horses.

Some of the dandies would carry splints and bandages.

When the brigade comes to a halt for some weeks, part of the reserve would be sent up, and it could be returned again when the brigade marches, so as not to hamper the fighting column.

AMBULANCE.

The ambulance of a brigade now provides for the carriage of 49 patients in dandies and 160 on riding mules, besides four stretchers for each regiment.

There are 306 bearers for the dandies.

I propose—

					Bearers
19	Lying-down dandies	@ 6	bearers ...	... =	114
15	Sling dandies	@ 4	„ ...	... =	60
15	Stretcher dandies	@ 4	„ ...	... =	60
Total					234

or a saving of 72 bearers.

Besides, each regiment would have eight sling and eight stretcher dandies, on which could be carried 64 patients, borne by soldiers,—in an emergency, for a whole march.

The same number of riding ponies would be used as at present when the country was suitable.

Rickshaws driven by two men would be better than ponies when the roads are good enough, and they are far more economical.

If riding ponies are taken, half of them would be used in the first days of the march for carrying food for the brigade. When the food is eaten, the ponies are available for sick. In the same way half the bearers should be used to take 10 lbs. of food each. This would save 87 more transport mules.

Suppose a brigade to start with the full allowance of baggage, tentage, servants, etc., and taking 160 riding ponies for sick; it would have, with my system, approximately 413 men (including mule-drivers) and 96 mules. Under the present system it would have about 471 men and about 239 mules for the hospitals. There is therefore a saving of 57 men and 143 mules. I exclude riding ponies and their drivers, which are the same for both.

When no ponies can be taken for sick and all is cooly carriage, the coolies, who take the food of the troops, can be used for carrying sick when their loads are eaten. I will show how any number of sling dandies can be improvised as required.

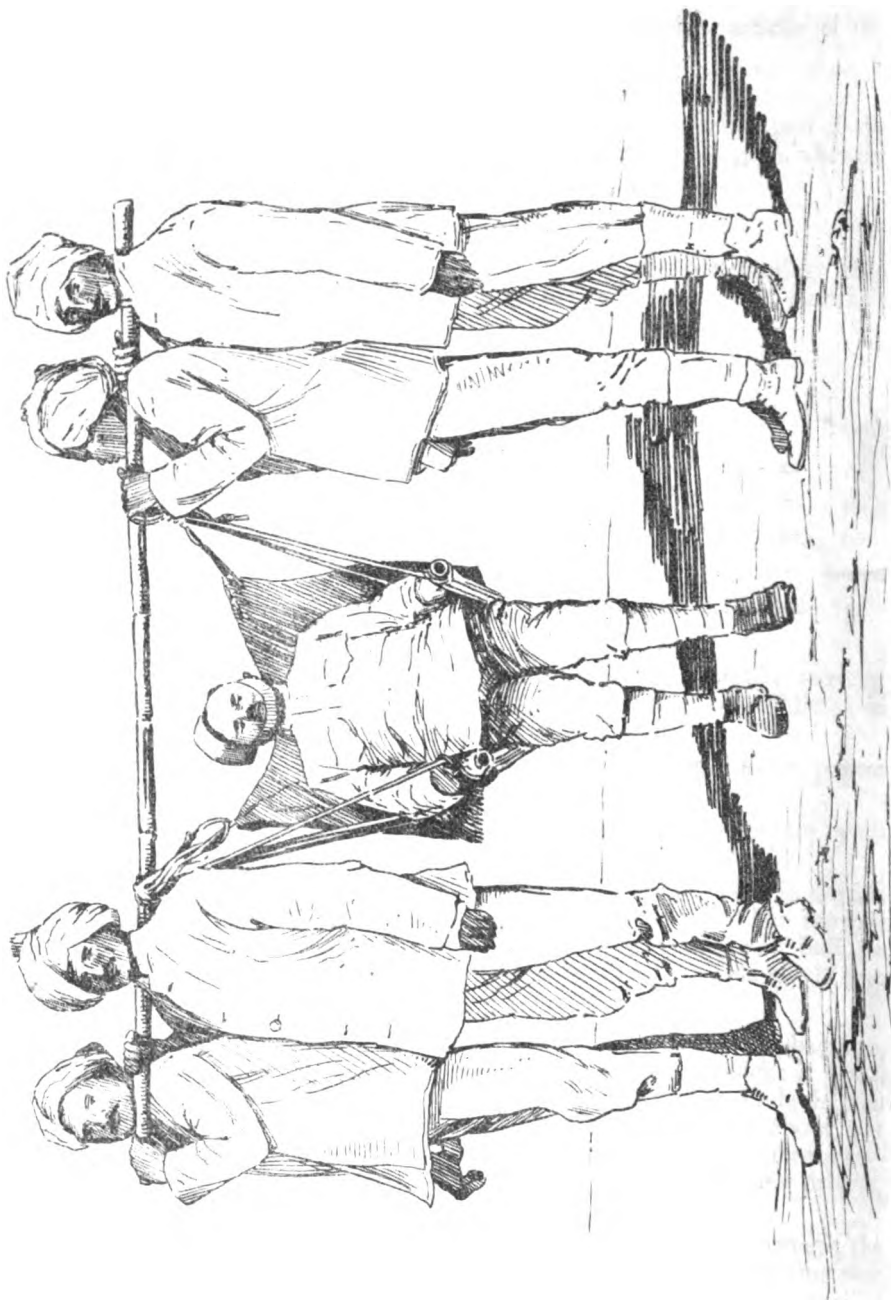


Fig No 1.

I set out with devising a hospital system for hill warfare, but the system here described is also best for the plains, except that fewer porters would be taken where rapid wheeled carriage is available, and fewer dandies would be required.

Shortly stated, with my system the column takes 42 porters in place of 105 mules with 35 drivers, and the entire saving is about 57 men and 143 mules.

At the same time the hospital is more elastic, mobile, divisible, accessible, and efficient, and it can keep up with the troops over any kind of country, while the present field hospitals must sometimes be left behind.

BEARER AMBULANCE.

In many instances in recent hill campaigns it was found impossible to carry the wounded in the regulation dandy. It has three chief faults—it is too heavy and too long, and its weight is badly adjusted on the bearers.

Two essential qualities for a hill dandy are (1) lightness and (2) shortness.

In some of the dandies here introduced shortness is secured by a new device, of placing the patient at right angles to the length of the dandy.

In others a new principle of adjusting the weight is introduced, by which it is borne by *both shoulders and both arms* instead of by *one shoulder only* as with the regulation dandy.

I.—SLING DANDY, FIG. 1

Weight, 12 lbs., compared with 80 lbs. of the regulation dandy.

[Hereafter "R. D." will stand for regulation dandy.]

A soldier of 140 lbs. weighs with his arms and accoutrements (30 lbs.) 170 lbs. The weight to be lifted in carrying him with this dandy is $170 + 12 = 182$ lbs. against 250 lbs. with the R. D., or each bearer supports $45\frac{1}{2}$ instead of $62\frac{1}{2}$ lbs., a difference of 17 lbs.

This dandy can be carried a day's march by four men instead of six required for the R. D.

(2) *Shortness* : obtain by placing the patient at right angles to the length of the dandy, which is only 7 feet. The R. D. is 11 or 12 feet in length.

The patient is in a very comfortable reclining posture. It would be possible by prolonging the seat a foot more to support the legs to the ankles, so that he would be in a lying position, but this *might* make the dandy too wide for hill paths.

Nos. 1 and 2 only require one bearer to carry them empty, while the R. D. empty require two.

II.—STRETCHER DANDY, FIG. 2.

(1) *Weight*—About 20 lbs.

(2) *Shortness*—7 feet long.

(3) Adjustment of weight—On a new principle, by which the weight is borne by straps, crossed like braces, and supported by both shoulders, helped by both arms.

The Figure shows it in use as a dandy borne by four men, the patient reclining, as in an arm-chair.

Here 47½ lbs. are supported by *both shoulders and both arms* instead of 62½ lbs. borne by *one shoulder* as with the R. D.

This dandy can be carried a march by four men, and so, like No. 1, saves 50 per cent. of bearers.

It is converted into a stretcher by pulling on a slip over the poles on each side of the seat. On this the patient can lie down as on the ordinary stretcher. It can then be carried by two bearers, but owing to the braces used they can carry it much further than they could take the regulation stretcher.

It will be objected to both the above dandies that the patient is not lying down. Quite so : but he is in a very comfortable reclining position, and it is often a case of being carried in this way or being left in the hands of the enemy. The sling dandy is the handiest possible arrangement for removing the dead.

In Tirah the wounded were carried lying on the stretchers, which were borne on the shoulders of four soldiers, two more soldiers carrying their rifles, *i.e.*, six soldiers for one patient.* In No. 1 Dandy two soldiers with rifles slung could carry a wounded man to the field hospitals ; four could take him a whole march.

Raised on men's shoulders the patient could neither be seen nor attended to, and he was in a most uncomfortable and dangerous position. If the bearers slipped, he would be killed.

It is no small advantage of the new dandies that the patient is near the ground, cannot be much hurt by a fall, has a comfortable feeling of security, is free from jars and jerks, and can be watched and attended to, and that he undergoes the easiest possible form of movement.

Hitherto the chief difficulty in arranging for bearer ambulances has been due to the extraordinary fallacy that the wounded must all be carried by them in the lying posture.

I saw a very large number of the wounded returning from the Chitral Relief Force of 1895 and from Tirah, and I don't think there were five of them that could not be carried in the reclining posture with comfort.

III.—THE RICKSHAW.

Apparently it is owing to the same fallacy that the Rickshaw is not used. This would be a great addition to the existing ambulance at all stations and on most marches and most campaigns. It is more comfortable and more economical than a riding pony.

* Captain Edwards in U. S. I. Journal for July 1898, p. 359.

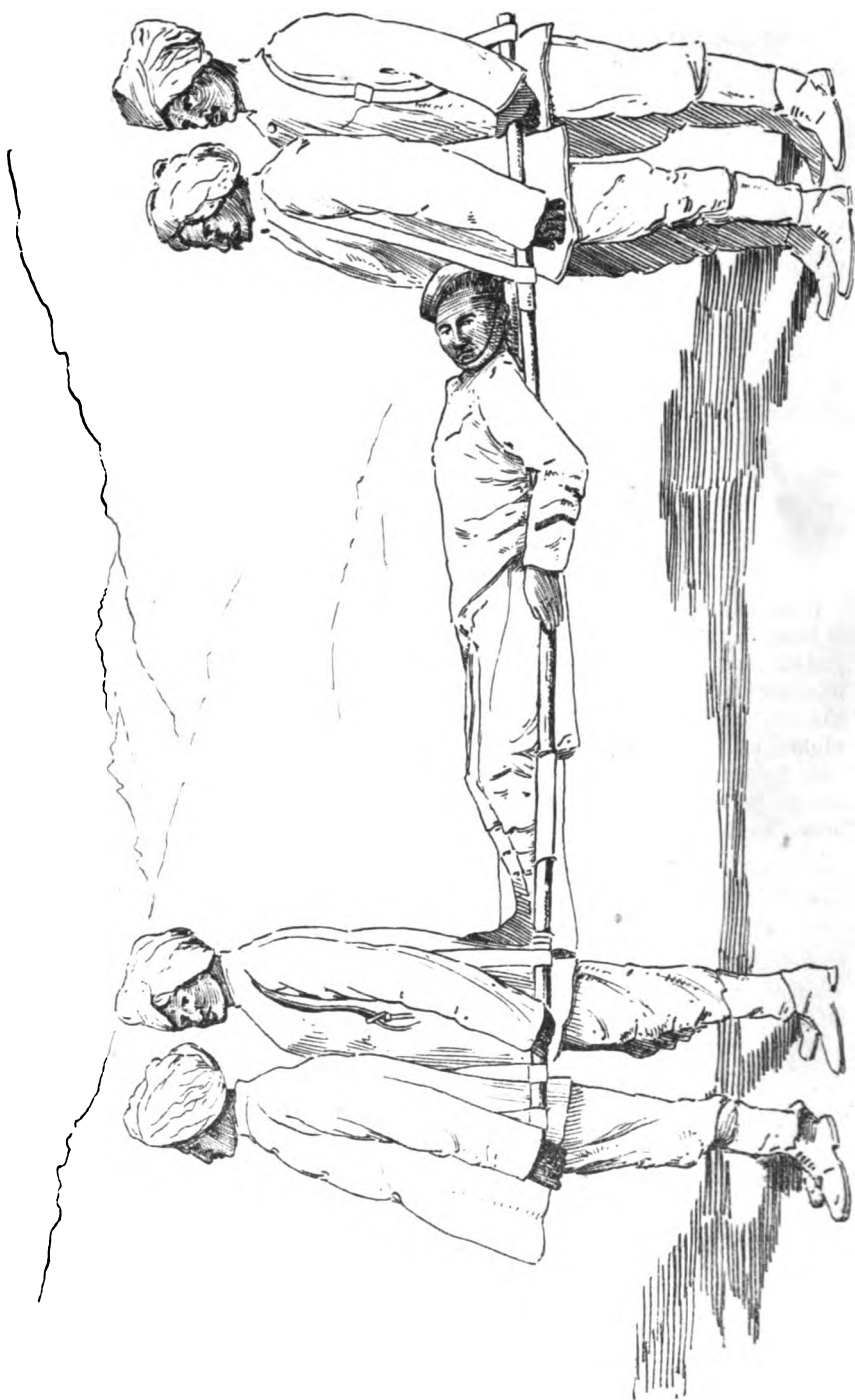


Fig. 3.

A wheeled stretcher is also required in all stations and on all good roads.

IV.—NO. 3 DANDY, FIG. 3.

In this the patient lies down. It is carried like No. 2 by straps, so that the weight is supported by both shoulders and both arms.

This may be used in the plains and in parts of the hills. It can be carried a day's march by five men. It is 9 feet long and weighs about 32 lbs.

V.—THE LUSHAI DANDY.

As first introduced, the Lushai Dandy was rather good, but it has been altered into a rickety imitation of the old dooly, as heavy, but neither as rigid nor as strong.

The Lushai Dandy for the present should be restored. It should have a light millerained khaki cover thrown over the pole, without the wicker roof. It should be properly built, not like the shaky vehicle now in use.

VI.—THE REGULATION STRETCHER.

It weighs 30 lbs. The strap bears on the back of the neck pushing the head painfully forwards. In No. 2 I have described the proper kind of straps, which should be like a pair of trouser braces, supported by the middle of both shoulders. In point of fact the strap of the regulation stretcher is hardly used, owing to its painful pressure, and the weight is mostly supported by the arms. Even this single strap would be better supported if worn diagonally across one shoulder only, instead of around the neck as it is now. The whole construction is clumsy, heavy, and defective.

In construction the new dandies are lighter and stronger than the old, and they are much more efficient.

It would be useless to describe their construction until the *principles* which I have introduced are adopted.

There is another way of carrying a patient lying on the stretcher by four men, and there is another dandy chair like Fig. 2.

SOME FOREIGN ARTICLES OF SPECIAL INTEREST.

ON "DRAGON" AND CAPTIVE BALLOONS.

(Contributed by the Intelligence Branch.)

FROM THE "HEERES-ZEITUNG."

The "Revista di artiglieria" has the following on the subject of "dragon" and captive balloons. The new "dragon" balloon, the pattern of which should, in the future, be adopted for all captive balloons, is in shape long, resembling a cigar, and should, when in the air, assume a sloping upright position. Behind the lower end is a long, curved, inflated attachment fixed to the so-called collar and looking like the tail of a cray-fish. A small round balloon the "rose," fastened by a rope, serves to steer with, and looks not unlike the dragon's tail. The basket is fastened under the middle of the balloon, the tow-rope more to the front. This ingenious shape, for which we have to thank the mutual endeavours of Lieutenant von Siegsfeld of the Balloon Section and the Bavarian Captain von Parseval, assures greater certainty against oscillation, when making observations. The balloon proper, which is cylindrical in shape with rounded ends, contains in its lower portion a peculiar vessel which receives the in-rushing air through a funnel and from which the main gas reservoir is separated by a partition consisting of folded material. The latter on a slight in-rush of air enables the gas to inflate the lower reservoir or *vice versa*. This arrangement has brought about the adoption of the cylindrical shape. The collar, or wind-bag, which is filled with air, contributes considerably to reducing the oscillation which strong winds otherwise cause. The "rose" is in the form of a ring with a central opening of 10 centimetres. The rope is 50 mètres long. The "rose" has underneath yet another long tail composed of little pegs, which are strung together on a rope. This arrangement secures considerable resistance to the wind and increases the steadiness of the whole. According to the "Army and Naval Journal" of July 3rd, experiments with such balloons took place on the sea, when the balloons went up 1,000 mètres; the cable was fastened to a torpedo boat, which went 18 knots an hour. The old ball-shaped captive balloon is acknowledged to have the great disadvantage of getting out of hand in a wind of 10·5 mètres strong—consequently in stormy weather it is almost useless. This disadvantage, it is hoped, will be overcome by this dragon balloon, which keeps its stability even in stormy, windy weather. At the last Imperial Manœuvres only "dragon" balloons were used by the Balloon Section, when their utility

was proved. At the Leipsic Industries and Crafts Exhibition of 1897, a 30 days' trial took place of a captive balloon of 3,250 cubic mètres, made by F. L. Godard and Eugen Turpin. The first filling with 3,200 cubic mètres of hydrogen gas took 21 hours to accomplish. In the course of the experiments, 623 cubic mètres were used for re-filling, a daily average of 20·8 cubic mètres of gas, or 0·65 per cent. of the contents of the balloon. This was an extraordinarily small consumption, for the military balloonists reckon on a daily use, for re-filling a captive balloon, of some 20 per cent. This speaks for the great closeness of the balloon's covering, the excellent quality of the materials used, as well as for the great skill and knowledge of the maker. During the 30 days 106 ascents took place, on some days as many as 20, carrying 10 people and 500 kilogrammes ballast (25 sand-bags of 20 kilogrammes each). The inflation remained constant during the whole experiments and amounted to 2,280 kilogrammes on the 1st day and to 2,250 on the 30th. Therefore a captive balloon can—given careful handling and re-fillings at the right time—be kept in use for a very long time.

The advantages to be gained by the Military Balloon Section from the experiments with the Leipsic Balloon are evident and need no further explanation.

NOTICE.

The Council has placed Rs. 500 at the disposal of the Ex-Committee for allotment as premia during the current year to the writers of articles of exceptional merit.

It is proposed to start a collection of photographs of naval and military interest. Some photographs have already been promised by a Member, and the Council will be glad to receive other contributions.

- 1872.....ROBERTS, Lieut.-Col. F. S., V.C., R.A.
 1873.....COLQUHOUN, Capt. J. A. S., R.A.
 1874.....COLQUHOUN, Capt. J. A. S., R.A.
 1879ST. JOHN, Maj. O. B. C., R.E.
 1880.....BARROW, Lieut. E. G., S.C.
 1882.....MASON, Lieut. A. H., R.E.
 1883.....COLLEN, Maj. E. H. H., S.C.
 1884.....BARROW, Capt. E. G., S.C.
 1887.....YATE, Lieut. A. C., S.C.
 1888.....MAUDE, Capt. F. N., R.E.
 YOUNG, Maj. G. F., S.C. (specially awarded a silver medal)
 1889.....DUFF, Capt. B., S.C.
 1890.....MAGUIRE, Capt. C. M., S.C.
 1891.....CARDEW, Lieut. F. G., S.C.
 1893.....BULLOCK, Maj. G. M., Devon. Regt.
 1894.....CARTER, Capt. F. C., Northumberland Fusiliers.
 1895.....NEVILLE, Lieut.-Col. J. P. C., S.C.
 1896.....BINGLEY, Capt. A. H., S.C.
 1897.....NAPIER, Capt. G. S. F., 2nd Bn. Oxfordshire Light Infantry
 1898.....MULLALY, Maj., H., R.E.
 CLAY, Capt. C. H., S.C. (specially awarded a silver medal).
 1899.....NEVILLE, Col. J. P. C., S.C.

MacGregor Memorial Silver Medallists.

- 1889.....BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).
 1890.....YOUNGHUSBAND, Capt. F. E., K. Dn. Gds.
 1891.....SAWYER, Maj. H. A., S.C.
 1891.....RAMZAN KHAN, Havildar, 3rd Sikhs.
 1892.....VAUGHAN, Capt. H. B., S.C.
 1892.....JAGGAT SINGH, Havildar, 19th P. I.
 1893.....BOWER, Capt. H., S.C. (specially awarded a gold medal).
 1893.....FAZALDAD KHAN, Dafadar, 17th B. C.
 1894.....O'SULLIVAN, Maj. G. H. W., R.E.
 1894.....MULL SINGH, Sowar, 6th B. C.
 1895.....DAVIES, Capt., Oxfordshire Light Infantry.
 1895.....GUNGA DYAL SINGH, Havildar, 2nd B. I.
 1896.....COCKERILL, Lieut. G. K., 28th P. I.
 1896.....GHULAM NABI, Private, Q. O. Corps of Guides.
 1897.....SWAYNE, Capt. E. J. E., 16th B. I.
 1897.....SHAHZAD MIR, Dafadar, 11th B. L.
 1898.....WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.
 1898.....ADAM KHAN, Havildar, Guides Infantry.

The Journal

OF THE

United Service Institution of India.

VOL. XXVIII.

OCTOBER 1899.

No. 137.

"STONEWALL JACKSON."

BY COLONEL E. G. BARROW, C.B.,
DEPUTY SECRETARY, MILITARY DEPARTMENT.

Wednesday, 12th July 1899.

*His Excellency Sir William Lockhart, G.C.B., K.C.S.I., Com-
mander-in-Chief in India, in the Chair.*

I have selected Stonewall Jackson as a suitable subject for a lecture in this theatre, firstly, because the story of the American Civil War is less known than it deserves to be; and, secondly, because it seems to me that the lessons of that war are more applicable to English soldiers than those of the European campaigns we usually study. For here we have the story of battles and marches by men of our own race, and what they could do, we too can do if need be.

The most interesting and perhaps the most instructive period of the great Civil War is that covered by the campaigns of Stonewall Jackson in Virginia and the Shenandoah Valley, namely, those of 1861-62-63; and for the study of that period we now have at our disposal an admirable biography by Colonel Henderson, the Professor of Military History at the Staff College. That work is a master-piece of military literature, which all soldiers may study with profit as well as with pleasure. I cannot too strongly commend it to the notice of those who have not yet read it; and if, in my lecture, I lean entirely upon it as my guide, it is because there is no other work on the subject so reliable as to facts, so instructive in its deductions, or so engrossing as a historical narrative.

Jackson was born in January 1824; consequently, when the Civil War broke out in 1861, he was only 37 years of age. He came of

4A

that grand breed of men, the Ulster Scotch, which has given to our own history so many of its heroes. He received his military education at West Point; and in 1846, shortly after obtaining his commission in the artillery, he accompanied his battery on service to Mexico. In the Mexican campaign he frequently distinguished himself, and at its close in 1848 he returned to the States a Captain and Brevet-Major. That campaign had an enormous influence on his future career, as, apart from the practical training he there acquired, he became closely connected with nearly all the professional soldiers who afterwards rose to eminence during the war of the rebellion. Lee, Grant, McClellan, Hooker, Johnston, Pope, Longstreet and many others were all comrades of the Mexican campaign, and so it came to pass a dozen years later that the generals on the both sides, Confederates and Federals alike, were intimately acquainted with each other's characters.

Hear what Colonel Henderson says on this point for it is one of considerable significance.

"The expedition had demanded the services of nearly every officer in the army of the United States, and in the toils of the march, in the close companionship of the camp, in the excitement of battle, the shrewder spirits probed the characters of their comrades to the quick. In the history of the Civil War there are few things more remarkable than the use which was made of the knowledge thus acquired. The clue to many an enterprise daring, even to fool-hardiness, is to be found in this. A leader so intimately acquainted with the character of his opponent as to be able to predict with certainty what he will do under any given circumstances may set aside with impunity every established rule of war."

As Grant himself said, "the acquaintance thus formed was of immense service to me in the war of the rebellion."

In March 1851 Jackson was appointed Professor of Artillery Tactics and Natural Philosophy at the Virginia Military Institute. Here he remained till the Civil War broke out. Here, too, he laid the foundation of his future success as a General, for it was during these ten years of professorial life that he found time to study the theory and history of war.

By that study "his imagination was trained and invigorated until it became capable of grasping the most extensive and complex considerations.

Such training was undoubtedly the very best foundation for the intellectual side of a General's business.

War presents a constant succession of problems to be solved by mental processes. For some experience and resource supply a ready solution. Others involving the movements of large bodies, considerations of time and space and the thousand and one circumstances, such as food, weather, roads, topography and morale, which a General must always bear in mind, are composed of so many factors that only a brain accustomed to hard thinking can deal with them successfully."

The moral of this is the old story that it is study—hard study—which goes to form the heaven-born general. Cæsar, Napoleon, Moltke have all taught us this truth.

In 1860 came the great rift which for a time severed north from south, and led to the most prolonged and devastating war which the world had seen since the fall of Napoleon. Political agitation swiftly led to armed rebellion, and in the spring of 1861 the Lexington Professor offered his sword to his native state of Virginia. In April he was appointed Colonel of Virginia Volunteers, and sent to command the garrison at Harper's Ferry, an important strategic point covering the Shenandoah Valley, as well as the railway crossing of

the Potomac. The force under his command was quite unorganised, undisciplined and untrained; ammunition was scarce, the artillery equipment was of the rudest kind, supply and medical services were non-existent, and the only transport was the wagons of the farmers; yet out of this unpromising material Jackson set to work to manufacture that renowned brigade which was destined shortly to immortalise his name.

The troops of the Union were as little ready to take the field as the Confederates, and for some weeks no active measures were undertaken on either side.

At the end of May, Jackson was relieved of his command by General Johnston, and he himself became a simple brigadier with five battalions of infantry and a battery of smooth-bores under his command. This battery was commanded by a parson, named Pendleton, the Rector of Lexington, who had formerly been a West Point cadet, and who eventually became Lee's Chief of Artillery. Except Jackson himself and perhaps a few of the superior officers, there was not a professional soldier in the whole brigade. The first notable exploit of this famous brigade was the part it took in the battle of Bull Run, which I will now briefly describe.

At this period, July 1861, Virginia was threatened by three Federal armies. General McDowell with over 50,000 men was in and about Alexandria, opposite Washington, on the right bank of the Potomac. McClellan with 20,000 was operating west of the Alleghanies in the direction of Staunton, and over 10,000 men under Patterson were encamped near Martinsburg. To oppose these 80,000 men, the Confederates had only 32,000, of which 20,000 were at Manassas Junction under Beauregard, and the remainder under Johnston in the Shenandoah Valley. Beauregard's position on the Bull Run river covered the junction of two important lines of railway—one from Richmond, the other from Strasburg. He thus defended, not only his own communications with his base at Richmond, but also the line that linked him with Johnston. If Patterson or McClellan should advance and crush Johnston, Beauregard's flank and rear would be threatened, and he would be compelled to fall back upon Richmond. On the other hand, if McDowell drove back Beauregard, Johnston in the Shenandoah Valley would be cut off, isolated and exposed to annihilation. The Confederate position indeed seemed desperate! On the 16th July the Federal forward movement began. McDowell advancing towards Centreville and Patterson on Winchester. The Confederate plan was to hold the line of Bull Run and reinforce Beauregard by Johnston's division. Even then they could only hope to concentrate some 30,000 men wherewith to oppose McDowell's 50,000, but it was the best they could do, and the plan was strategically correct. By the 20th the Federals were threatening all the fords of Bull Run, but meanwhile Jackson's brigade had reinforced Beauregard by rail, and the remainder of Johnston's division was already on the eastern side of the Blue Ridge; his evacuation of the valley having been skilfully masked by his cavalry. On the 21st McDowell with two divisions attacked the Confederate front and right south of Centreville, while with two others he made a long turning movement by Sudley Springs.

This was so far successful that he crossed the river and compelled the Confederate left to form front to a flank. The ground, however, favoured defensive action and gave time for reinforcements to arrive. The weak Confederate left wing was at first driven back, but Jackson's brigade made a brilliant counter-stroke, and the remainder of Johnston's troops, arriving by rail, fell on the disorganised Federal right flank. The confusion was terrible, and the notorious panic flight of Bull Run was the immediate result.

Thus ended the first great episode in the life of Stonewall Jackson. It was, I may mention, the occasion which won for him his famous *soubriquet*. Colonel Henderson thus describes the incident, which occurred at that critical period of the fight when the Confederates were falling back.

"At this moment appeared General Bee approaching at full gallop, and he and Jackson met face to face. The latter was cool and composed; Bee covered with dust and sweat, his sword in his hand and his horse foaming. 'General', he said, 'they are beating us back.' 'Then, Sir, we will give them the bayonet.' And the 1st brigade pressing up the slope formed into line on the eastern edge of the Henry Hill.

"Jackson's determined bearing inspired Bee with renewed confidence. He turned bridle and galloped back to the ravine where his officers were attempting to reform their broken companies. Riding into the midst of the throng, he pointed with his sword to the Virginia regiments deployed in well ordered array on the height above, 'Look!' he shouted, 'There is Jackson standing like a stone wall! Rally behind the Virginians!' The men took up the cry and the happy augury of the expression applied at a time when defeat seemed imminent and hearts were failing was remembered when the danger had passed away."

That inspired phrase has immortalised the name of Jackson and his brigade for all time.

This battle doubtless conveys valuable instruction both in strategy and tactics, but to my mind the most impressive lesson it imparts is the utter inability of untrained troops, however brave, to manœuvre on the battlefield, or even to engage in offensive tactics. The courage and patriotism of the Federal soldier were equal to that of the Southerner, while in numbers and equipment the Confederates were far inferior. The advantage of the initiative lay with the Federals and success seemed within their grasp. It was not bad generalship that lost them the battle, but the absence of that discipline and training which are essential to fight successfully an offensive battle against a strongly posted enemy.

I would here like to quote a short extract from Colonel Henderson's book, as that may give you a clearer idea of my meaning:—

"The movement of such a mass demanded precise arrangement on the part of the staff, and on the part of the troops most careful attention to order and punctuality, but of these both staff and troops were incapable. The invading force might have done well in a defensive position, which it would have had time to occupy, and where the supply of food and forage carried on from stationary magazines would have been comparatively easy; but directly it was put in motion, inexperience and indiscipline stood like giants in the path. The Federal troops were utterly unfitted for offensive movements. The regiments had only been organised in brigades a week previously. They had never been exercised in mass. Deployments for battle had not yet been practised, and to deploy 10,000 or 20,000 men for attack is a difficult operation, even with well drilled troops and an experienced staff."

A few months after the battle of Bull Run, Jackson was transferred to the command of the force in the Shenandoah Valley, and it was there that his fame, as a General, became firmly established. I do not propose to weary you with details of that astonishing campaign, in which, with far inferior forces, by dint of skilful strategy, by surprises and forced marches, followed by bewildering blows, Jackson kept at bay the armies of the Union advancing on the valley both from north and west. It was a wonderful campaign; to my mind quite as instructive in a strategical sense as Bonaparte's celebrated campaigns of 1796 and 1814. But it is one that should be studied in detail, and so I pass on to the summer of 1862, when Jackson was summoned to Eastern Virginia to take part in the great operations which were impending in that theatre of war.

At this period the main Federal attack had been transferred from the direct line of Washington and the Rappahannock to the Yorktown peninsula. Here, with his base on the sea, McClellan with 80,000 men was threatening Richmond. His army was astride the Chickahominy, McDowell with 35,000 men was advancing from Fredericksburg, Fremont and Banks were opposed to Jackson in the Valley, while the main Confederate army lay behind the fortified lines of Richmond. Once again all the cards seemed to be in the hands of the Federals! Once again the strategy of Bull Run was to be repeated! Banks and Fremont were mystified, while Jackson, by carefully concealed forced marches and by the help of the railway, transferred the bulk of his command from the Valley to the neighbourhood of Hanover Court House, whence he fell on McClellan's right flank. After seven days' hard fighting the combined forces of Lee and Jackson had driven McClellan's back to the shelter of his gun-boats on the James river, and the great concentric Federal movement on Richmond was brought to a standstill. McClellan's army was in jeopardy of annihilation, and it became necessary to take the pressure off him; consequently the Federal forces in Northern Virginia under Banks, McDowell and Sigel were united into one army, the command of which was given to General Pope, with instructions to advance at once on Gordonsville. Lee sent Jackson north to delay and oppose Pope, and shortly afterwards he himself joined Jackson on the Rapidan, leaving McClellan to re-embark his demoralised troops and clear out of the peninsula as quickly as he could.

I now come to the second episode of the war on which I propose to dwell, namely, Jackson's celebrated flank march by Thoroughfare Gap which ended in the second battle of Manassas. On the afternoon of the 24th August the position of the opposing forces was as follows:—

Pope with 80,000 men was behind the Rappahannock, a broad and rapid river with high banks, only passable at certain defined points. His whole force was concentrated between Sulphur Springs and Warrenton, covering the main road to Washington. McClellan in the meanwhile, as was revealed to Lee by a captured note-book of General Pope's, had already begun disembarking his divisions at Aquia Creek, with orders for them to march north as quickly as possible to reinforce Pope. Thus it was evident that within a few days Pope would have 150,000 men at his disposal to oppose which

Lee had less than half that number, even including troops still more than 80 miles distant from head-quarters. Jackson on the right bank was facing Pope, Longstreet's troops were lower down near Rappahannock Station; the position for the Confederates was critical, delay would be fatal, and Pope must be crushed before McClellan's troops could arrive. Yet Pope held an undeniably strong position. In his front was the Rappahannock offering a serious obstacle; his right flank was covered by the wooded ranges of the Bull Run Mountains, while his left the Confederates dare not turn in the face of McClellan's threatened advance. Lee decided to risk everything on the hazard of one of the boldest flank marches that all history records. Jackson was to cross the Bull Run Mountain by Thoroughfare Gap, 10 miles north of Pope's right and then strike at his communications with Washington. Meanwhile Longstreet was to keep Pope in play. Thus 55,000 men, all Lee had actually available, were to operate in two wings separated by two days' march from one another against a concentrated army of 80,000 men. It was a desperate manoeuvre, for, if Pope discovered Jackson's movement in time, he could hurl himself on either wing, and defeat would mean ruin to the Confederate cause, as McClellan could easily cut off all retreat on Richmond. Lee, however, felt that the risk was justifiable. He knew both Jackson and Pope; he relied on Jackson's energy and decision, while he felt certain Pope would lose his head. On the evening of the 24th Jackson began his preparations for his most famous flank march.

"His troops were quietly withdrawn from before Sulphur Springs, while Longstreet's division, unobserved by the Federals, took their place. Three days' cooked rations were to be carried in the haversacks, and a herd of cattle, together with the green corn standing in the fields, was relied upon for subsistence until requisition could be made on the Federal magazines. The troops marched light. Knapsacks were left behind. Tin cans and a few frying pans formed the only camp equipment, and many an officer's outfit consisted of a few badly baked biscuits and a handful of salt.

Long before dawn the divisions were a-foot.

As their guides led northward, and the sound of the guns, opening along the Rappahannock, grew fainter and fainter, a certain excitement began to pervade the column. Something mysterious was in the air.

* * * *

The march led first by Orleans to Salem, a village on the Manassas Gap Railway. Where the roads diverged from the shortest line, the troops took to the fields. Guides were stationed by the advanced guard at each gap and gate which marked the route. Every precaution was taken to conceal the movement.

The roads in the direction of the enemy were watched by cavalry, and so far as possible the column was directed through woods and valleys. The men, although they knew nothing of their destination, whether Winchester, or Harpers Ferry, or even Washington itself, strode on mile after mile, through field and ford, in the fierce heat of the August noon, without question or complaint. 'Old Jack' had asked them to do their best, and that was enough to command their most strenuous efforts.

Near the end of the day Jackson rode to the head of the leading brigade, and complimented the officers on the fine condition of the troops and the regularity of the march. They had made more than 20 miles, and were still moving briskly, well closed up, and without stragglers. Then, standing by the wayside, he

A few months after the battle of Bull Run, Jackson was transferred to the command of the force in the Shenandoah Valley, and it was there that his fame, as a General, became firmly established. I do not propose to weary you with details of that astonishing campaign, in which, with far inferior forces, by dint of skilful strategy, by surprises and forced marches, followed by bewildering blows, Jackson kept at bay the armies of the Union advancing on the valley both from north and west. It was a wonderful campaign; to my mind quite as instructive in a strategical sense as Bonaparte's celebrated campaigns of 1796 and 1814. But it is one that should be studied in detail, and so I pass on to the summer of 1862, when Jackson was summoned to Eastern Virginia to take part in the great operations which were impending in that theatre of war.

At this period the main Federal attack had been transferred from the direct line of Washington and the Rappahannock to the Yorktown peninsula. Here, with his base on the sea, McClellan with 80,000 men was threatening Richmond. His army was astride the Chickahominy, McDowell with 35,000 men was advancing from Fredericksburg, Fremont and Banks were opposed to Jackson in the Valley, while the main Confederate army lay behind the fortified lines of Richmond. Once again all the cards seemed to be in the hands of the Federals! Once again the strategy of Bull Run was to be repeated! Banks and Fremont were mystified, while Jackson, by carefully concealed forced marches and by the help of the railway, transferred the bulk of his command from the Valley to the neighbourhood of Hanover Court House, whence he fell on McClellan's right flank. After seven days' hard fighting the combined forces of Lee and Jackson had driven McClellan's back to the shelter of his gun-boats on the James river, and the great concentric Federal movement on Richmond was brought to a standstill. McClellan's army was in jeopardy of annihilation, and it became necessary to take the pressure off him; consequently the Federal forces in Northern Virginia under Banks, McDowell and Sigel were united into one army, the command of which was given to General Pope, with instructions to advance at once on Gordonsville. Lee sent Jackson north to delay and oppose Pope, and shortly afterwards he himself joined Jackson on the Rapidan, leaving McClellan to re-embark his demoralised troops and clear out of the peninsula as quickly as he could.

I now come to the second episode of the war on which I propose to dwell, namely, Jackson's celebrated flank march by Thoroughfare Gap which ended in the second battle of Manassas. On the afternoon of the 24th August the position of the opposing forces was as follows:—

Pope with 80,000 men was behind the Rappahannock, a broad and rapid river with high banks, only passable at certain defined points. His whole force was concentrated between Sulphur Springs and Warrenton, covering the main road to Washington. McClellan in the meanwhile, as was revealed to Lee by a captured note-book of General Pope's, had already begun disembarking his divisions at Aquia Creek, with orders for them to march north as quickly as possible to reinforce Pope. Thus it was evident that within a few days Pope would have 150,000 men at his disposal to oppose which

Lee had less than half that number, even including troops still more than 80 miles distant from head-quarters. Jackson on the right bank was facing Pope, Longstreet's troops were lower down near Rappahannock Station; the position for the Confederates was critical, delay would be fatal, and Pope must be crushed before McClellan's troops could arrive. Yet Pope held an undeniably strong position. In his front was the Rappahannock offering a serious obstacle; his right flank was covered by the wooded ranges of the Bull Run Mountains, while his left the Confederates dare not turn in the face of McClellan's threatened advance. Lee decided to risk everything on the hazard of one of the boldest flank marches that all history records. Jackson was to cross the Bull Run Mountain by Thoroughfare Gap, 10 miles north of Pope's right and then strike at his communications with Washington. Meanwhile Longstreet was to keep Pope in play. Thus 55,000 men, all Lee had actually available, were to operate in two wings separated by two days' march from one another against a concentrated army of 80,000 men. It was a desperate manœuvre, for, if Pope discovered Jackson's movement in time, he could hurl himself on either wing, and defeat would mean ruin to the Confederate cause, as McClellan could easily cut off all retreat on Richmond. Lee, however, felt that the risk was justifiable. He knew both Jackson and Pope; he relied on Jackson's energy and decision, while he felt certain Pope would lose his head. On the evening of the 24th Jackson began his preparations for his most famous flank march.

"His troops were quietly withdrawn from before Sulphur Springs, while Longstreet's division, unobserved by the Federals, took their place. Three days' cooked rations were to be carried in the haversacks, and a herd of cattle, together with the green corn standing in the fields, was relied upon for subsistence until requisition could be made on the Federal magazines. The troops marched light. Knapsacks were left behind. Tin cans and a few frying pans formed the only camp equipment, and many an officer's outfit consisted of a few badly baked biscuits and a handful of salt.

Long before dawn the divisions were a-foot.

As their guides led northward, and the sound of the guns, opening along the Rappahannock, grew fainter and fainter, a certain excitement began to pervade the column. Something mysterious was in the air.

* * * *

The march led first by Orleans to Salem, a village on the Manassas Gap Railway. Where the roads diverged from the shortest line, the troops took to the fields. Guides were stationed by the advanced guard at each gap and gate which marked the route. Every precaution was taken to conceal the movement.

The roads in the direction of the enemy were watched by cavalry, and so far as possible the column was directed through woods and valleys. The men, although they knew nothing of their destination, whether Winchester, or Harpers Ferry, or even Washington itself, strode on mile after mile, through field and ford, in the fierce heat of the August noon, without question or complaint. 'Old Jack' had asked them to do their best, and that was enough to command their most strenuous efforts.

Near the end of the day Jackson rode to the head of the leading brigade, and complimented the officers on the fine condition of the troops and the regularity of the march. They had made more than 20 miles, and were still moving briskly, well closed up, and without stragglers. Then, standing by the wayside, he

watched his army pass. Ewell's division led the way, and when the men saw their General, they prepared to salute him with their usual greeting. But as they began to cheer, he raised his hand to stop them, and the word passed down the column—'Don't shout, boys, the Yankees will hear us'; and the soldiers contented themselves with swinging their caps in mute acclamation. When the next division passed, a deeper flush spread over Jackson's face. Here were the men he had so often led to triumph, the men he had trained himself, the men of the Valley, of the First Manassas, of Kernstown, and M'Dowell. The Stonewall regiments were before him, and he was unable to restrain them; devotion such as theirs was not to be silenced at such a moment, and the wild battle-yell of his own brigade set his pulses tingling. For once a breach of discipline was condoned! 'It is of no use' said Jackson, turning to his staff, 'You see I can't stop them'; and then, with a sudden access of intense pride in his gallant veterans, he added, half to himself, 'Who could fail to win battles with such men as these.'

It was midnight before the column halted near Salem village, and the men, wearied outright with their march of six and twenty miles, threw themselves on the ground by the piles of muskets, without even troubling to unroll their blankets. So far the movement had been entirely successful. Not a Federal had been seen, and none appeared during the warm mid-summer night. Yet the soldiers were permitted scant time for rest. Once more they were aroused while the stars were bright; and, half awake, snatching what food they could, they stumbled forward through the darkness. As the cool breath of the morning rose about them, the dark forests of the Bull Run Mountains became gradually visible in the faint light of the eastern sky, and the men at last discovered whither their General was leading them.

Through Thoroughfare Gap, a narrow gorge in the Bull Run range, the column wound steadily upwards, and, gaining the higher level, the troops looked down on the open country to the eastward. Not a solitary scout was visible; no movement was reported from the direction of Warrenton; and the troops pressed on, further and further round the Federal rear, further and further from Lee and Longstreet. The cooked rations which they carried had been consumed or thrown away; there was no time for the slaughter and distribution of the cattle; but the men took tribute from the fields and orchards, and green corn and green apples were all the morning meal that many of them enjoyed. Beyond Gainseville, Jackson took the road which led to Bristoe Station, some 7 miles south of Manassas Junction. Here, breaking down the railway bridge over Broad Run, and establishing his main body in an almost impregnable position behind the stream, he could proceed at his leisure with the destruction of the stores at Manassas Junction.

The sun had not yet set when the advanced guard arrived within striking distance of Bristoe Station. Munford's squadrons, still leading the way, dashed upon the village. Ewell followed in hot haste, and a large portion of the guard, consisting of two companies—one of cavalry and one of infantry, was immediately captured. A train returning empty from Warrenton Junction to Alexandria darted through the station under a heavy fire. The line was then torn up, and two trains, which followed in the same direction as the first, were thrown down a high embankment. A fourth, scenting danger ahead, moved back before it reached the break in the road. The column had now closed up, and it was already dark. The escape of the two trains was most unfortunate. It would soon be known, both at Alexandria and Warrenton, that Manassas Junction was in danger. The troops had marched nearly five and twenty miles; but if the object of the expedition was to be accomplished, further exertions were absolutely necessary. Trimble, energetic as ever, volunteered with two regiments, the 21st Georgia and 21st North Carolina, to move on Manassas Junction. Stuart was placed in command, and without a moment's delay the detachment moved northward through the woods. The night was hot and moonless. The infantry moved in order of battle, the skirmishers in advance; and pushing slowly forward over a broken country, it was nearly midnight before they reached the junction. Half a mile from the dépôt their advance was greeted by a salvo of shells. The Federal garrison, warned by the fugitives from Bristoe Station, was on the alert; but so harmless was their fire that Trimble's men swept on without a check.

The Northern gunners, without waiting for the onset, fled through the darkness, and two batteries, each with its full complement of guns and wagons, became the prize of the Confederate infantry. Stuart, coming up on the flank, rode down the fugitives. Over 300 prisoners were taken, and the remainder of the garrison streamed northward through the deserted camps.

The results of this attack more than compensated for the exertions the troops had undergone. Only 15 Confederates had been wounded, and the supplies on which Pope's army depended, both for food and ammunition, were in Jackson's hands.

The next morning Hill and Taliaferro's divisions joined Trimble. Ewell remained at Bristoe; cavalry patrols were sent out in every direction, and Jackson, riding to Manassas, saw before him the reward of his splendid march. Streets of ware-houses, stored to overflowing, had sprung up round the junction. A line of freight cars, 2 miles in length, stood upon the railway. Thousands of barrels, containing flour, pork and biscuit, covered the neighbouring fields. Brand new ambulances were packed in regular rows. Field-ovens, with the fires, still smouldering, and all the paraphernalia of a large bakery attracted the wondering gaze of the Confederate soldiery; while great pyramids of shot and shell, piled with the symmetry of an arsenal, testified to the profusion with which the enemy's artillery was supplied.

* * * * *

Money alone cannot provide good generals, a trained staff, or an efficient cavalry; and so on this August morning 20,000 ragged Confederates had marched right round the rear of the Federal army, and were now halted in undisturbed possession of all that made their enemy an effective force.

Few generals have occupied a position so commanding as did Jackson on the morning of August 27th. His enemies would henceforward have to dance while he piped. It was Jackson, and not Pope, who was to dictate the movements of the Federal army. It was impossible that the latter could now maintain its position on the Rappahannock, and Lee's strategy had achieved its end. The capture of Manassas Junction, however, was only the first step in the campaign.

I do not propose to dwell on the days of battle which followed at Groveton and Manassas, deeply interesting as they are, as examples of defensive actions fought by Jackson in order to gain time for Lee to come up and administer the *coup de grace* to Pope's demoralised and bewildered divisions; suffice it to say that by the morning of the 2nd September the Federals were in full retreat for their entrenched position at Alexandria opposite Washington, while the unfortunate Pope had been relieved of his command.

Before going further I will ask you to try and realize Pope's situation the day after the capture of Manassas Junction. He knew the Confederates were in his rear, but in what strength he could not even guess. At first he thought it was but a cavalry raid, and it was only the next night when he saw the whole Eastern sky lurid with the blaze of his burning depôt that he fully realized the extent of his disaster.

Lee and Longstreet had vanished from his front. Then too for a time he lost all touch of Jackson. For all he knew that redoubtable General might be marching on Maryland or Washington itself.

The fog of war was too much for Pope. He lost his nerve, while his Generals lost all confidence in him. Orders, counter-orders, disorders followed in rapid and bewildering succession, and so the reward of Lee's bold strategy and Jackson's wonderful march was the greatest Confederate success of the war. 45,000 Southerners had arrested for a time the invasion of Virginia and had scattered a host which mustered altogether nearly 150,000 men.



The reason for which I have described this great flank march is to impress on my brother-officers what men can do when they have confidence in their leaders, and feel that they are being called on for great exertions with good cause. Apart from generalship, other conditions such as morale and efficiency being equal, inferior numbers can best be compensated for by superior mobility, and when troops are inured to fatigue by months of campaigning and hardened by constant marching if they have confidence in their leaders, almost any exertions may be demanded of them. Battles are more often won by the sweat of the long toilsome march than by the blood of the fight. In two days Jackson's column of 20,000 men had covered over 50 miles, and that great march made under an August sun was followed by a week's continuous fighting and marching. Think what it would be to move from Simla to Kalka in two days with a whole army corps and then to fight and march for the best part of a week between that place and Umballa.

Remember, too, that the men were entirely dependent for food on what they could carry, or what they could take from the enemy. Doubtless there were many stragglers; but as Jackson used to say, it was better to lose one man on the line of march than five in battle. An orderly leisurely march might, on this occasion, have saved him a thousand stragglers, but in that case he might have been met by twice or thrice his number formed up for battle, and would utterly have failed in the whole object of the movement.

Directly after the dispersion of Pope's army, Lee gave orders for the Confederate forces to cross the Potomac. He hoped thereby to induce Maryland to rise in the Southern cause. In this, however, he was disappointed, and the bloody battle of Sharpsburg was fought without any adequate result. Lee's losses were so great that prudence compelled him to retire behind the Potomac into the Shenandoah Valley, but the Federal losses were heavier still, and they were far too disorganised to press Lee's retreat. In November, however, the Federals crossed into Northern Virginia under the command of Burnside.

To meet this attack, the Confederates concentrated at Fredericksburg on the south side of the Rappahannock, where, on December the 13th, they were attacked in force by an army of over 100,000 men.

In this the well-known battle of Fredericksburg the Federals lost over 12,000 men, and failing entirely in their object fell back across the river. Burnside was relieved by Hooker, and the two armies remained facing each other on the Rappahannock throughout the winter, each in a strongly entrenched position.

We now come to Chancellorsville, the great Confederate victory, which, by the death of Stonewall Jackson, proved so disastrous to the Confederate cause.

At the end of April Hooker was prepared to take the offensive. He had 130,000 men and 428 guns at his disposal, while Lee had but 62,000 men and 170 guns, with which he occupied a strong fortified position, covering 20 miles of the Rappahannock.

On this position Hooker dared not make a frontal attack, so relying on his great numerical superiority, he resolved to turn both flanks, and with his mass of cavalry threaten the Confederate communications.

He opined that these turning movements would at once compel Lee to retreat on Richmond, and that, having thus driven him from his defensive position, he would soon find some suitable opportunity for attacking and crushing him. On April 27th the movement began. Sedgwick with 40,000 men was to cross the Rappahannock below Fredericksburg and turn Lee's right. Hooker himself with 42,000 was to cross at Kelly's Ford and turn the Confederate left. 10,000 cavalry were to ride round their rear, while the rest of his troops were to remain north of the Rappahannock ready to act according to circumstances, and to reinforce either wing. By the morning of the 30th the Federal movement had so far developed that Hooker's plan stood revealed, and Lee was in a position to decide what should be his line of action. Leaving General Early with 10,000 men to contain Sedgwick, he himself with the rest of his army decided to fall on Hooker. At night-fall Hooker with three army corps was assembled at Chancellorsville, while reinforcements from the 2nd and 3rd corps were on the march to join him, so that Hooker might be said to be massed on Lee's right flank with 70,000 men.

Hooker was jubilant at the success of his march, and issued a bombastic order of the day on which he announced that "thus the enemy must ingloriously fly or give us battle on our own ground where certain destruction awaits him." General Stewart, however, who commanded the rebel cavalry kept Lee well informed of the Federal movements, and also spread an impenetrable screen round his own army behind which Lee could move unobserved. The Federal cavalry, on the other hand, had been sent far from the scene of action with a view to intercepting Lee's retreat.

On the morning of the 1st May 45,000 Confederates with 100 guns had concentrated in a good position at the junction of three roads, about 3 miles east of Chancellorsville. In front of it stretched the great dense forest, now known to fame as the Wilderness, in which the long columns of the Federals were involved. This position, 3 miles in length, had already been entrenched by the Confederates, but a defensive position met no favour in the eyes of Lee and Jackson, for there was always the fear that, while engaged with Hooker in front, Sedgwick might press back Early and close on the Confederate rear. Before 11 A.M. Jackson's troops were on the march towards Chancellorsville. They soon came in contact with the enemy, who, however, fell back after slight resistance. It became clear that the Federals were in great force in a strongly entrenched position in which they intended to fight. Their artillery swept every approach, and their left rested securely on the Rappahannock covering the United States Ford, while their right was at Hazelgrove. This position was doubtless strong, but it had one glaring defect, it could be turned on the right, while the thick forest screened all the movements of their opponents. The Confederate cavalry had ascertained that the Federal right was *en l'air*, and that their breast-works faced to the south and east only, so that the Federals evidently considered an attack from the west as out of the question. For that error of judgment they were shortly to pay a heavy penalty. That night Jackson and Lee for the last time laid their plans together. Jackson was to make a long turning movement through the Wilderness, while Lee

acted as a containing force in his present position until the decisive moment for a general advance should arrive. A Colonel Welford, who lived hard-by, and who of course knew every path, offered to act as guide, and at day-break Jackson's army corps was on the march, his front and flanks well covered by the cavalry under Stewart and Fitzhugh Lee. For long hours Jackson's troops filed through the forest, while Lee with scarcely 10,000 men skilfully demonstrated against the Federal front. About 8 A.M. the movement of Jackson's troops was observed from Hazelgrove; but as the road at the point observed turned south, Hooker jumped to the conclusion that Lee was retreating on Gordonsville, and about noon he permitted Sickles' corps to develop the situation by attacking from Hazelgrove towards Catherine's Furnace.

This movement was met and stopped by Jackson's rear troops and by Lee's extreme left, meanwhile Jackson moving in a south-westerly direction at length struck the Brock Road, 2 miles west of the Federal right flank, and then turned sharply northwards. About 2 P.M. Jackson had reached the Orange Plank Road, the point where he intended to turn east. Here he was met by Fitzhugh Lee conveying important information.

The cavalry had halted when it arrived on the Plank Road, but the brigadier had ridden forward to a wide clearing at the summit of a hill from which there was a view eastward.

"Below him but a few hundred yards distant ran the Federal breast-works with long lines of stacked arms in rear, untenanted by a single company.

Two cannon were seen on the high road, the horses grazing near at hand. The soldiers were scattered in small groups, laughing, cooking, smoking, sleeping and playing cards, while others were butchering cattle and drawing rations. What followed is best told in General Fitzhugh Lee's own words—'I rode back and met Jackson.' 'General,' said I, 'If you will ride with me, halting your columns here out of sight, I will show the great advantage of attacking down the old Turnpike instead of the Plank Road, the enemy's lines being taken in reverse. Bring only one courier, as you will be in view from the top of the hill.' Jackson assented. When we reached the eminence, the picture below was still unchanged.

To the remarks made to him while the unconscious line of blue was pointed out, he made no reply. Suddenly turning his horse towards the courier, he said 'Tell General Rodes to move across the Plank Road, and halt when he comes to the old Turnpike. I will join him there.' One more look at the Federal lines, and he rode rapidly down the hill.

At 4 P.M. Rodes was on the Turnpike. Passing down it for about a mile in the direction of the enemy, the troops were halted and formed for battle. Not a shot had been fired. A few hostile patrols had been observed, but along the line of breast-works watched closely by the cavalry, the Federal troops still in the most careless security were preparing their evening meal. 25,000 men were now deploying in the forest within a mile of the Federal works, and not a single general in the Northern army appears to have suspected their presence. So secure did Hooker feel that at 4-10 P.M. he wrote an order directing Sedgwick to 'capture Fredericksburg and vigorously pursue the enemy. We know that the enemy is flying, trying to save his trains.'

Jackson was determined that the troops should move forward in good order, and that every officer and man should know what was expected from him. Staff officers had been stationed at various points to maintain communication between the divisions, and the divisional and brigade commanders had received their instructions. The whole force was to push resolutely forward through the forest. The open hill, about a thousand yards eastward, was to be carried at all hazard. The men were in position, eagerly awaiting the signal. Across the narrow clearing

stretched the long grey lines penetrating far into the forest on either flank.

The heavy columns of A. P. Hill's division were rapidly advancing and the rumbling of the artillery, closing to the front, grew louder and louder. Jackson, watch in hand, sat silent on 'Little Sorrel,' his slouched hat drawn low over his eyes, and his lips tightly compressed. On his right was General Rodes, tall, lithe and soldierly, and on Rodes' right was Major Blackford. 'Are you ready, General Rodes?' said Jackson.

'Yes, Sir,' replied Rodes, impatient as his men.

'You can go forward, Sir,' said Jackson.

A nod from Rodes was a sufficient order to Blackford, and the woods rang with the notes of a single bugle.

Back came the responses from bugles to right and left, and the skirmishers, dashing through the undergrowth, sprang eagerly to their work, followed by the quick rush of the lines of battle. Through the still air of the summer evening rang the rebel yell, filling the forest far to north and south, and the hearts of the astonished Federals, lying idly behind their breast-works, stood still within them. So rapid was the advance, so utterly unexpected the attack, that the pickets were at once over-run.

The first position had been captured, but there was no pause in the attack. As Jackson, following the artillery, gazed across the clearing to the east, he saw a sight which raised high his hopes of a decisive victory. Already, in the green corn-fields, the spoils of battle lay thick around him. Squads of prisoners were being hurried to the rear. Abandoned guns, and wagons overturned, the wounded horses still struggling in the traces, were surrounded by the dead and dying of Howard's brigades. Knapsacks, piled in regular order, arms, blankets, accoutrements, lay in profusion near the breast-works; and beyond, under a rolling cloud of smoke and dust, the bare fields, sloping down to the brook, were covered with fugitives. Still further eastward, along the Plank Road, speeding in wild confusion towards Chancellorsville, was a dense mass of men and wagons.

Galloping up the Turnpike, and urging the artillery forward with voice and gesture, Jackson passed through the ranks of his eager infantry; and then Rodes' division, rushing down the wooded slopes, burst from the covert, and, driving their flying foes before them, advanced against the trenches on the opposite ridge.

Running to the front with uplifted swords, the officers gave the signal for the charge. The men answered with a yell of triumph, the second line, closing rapidly on the first, could no longer be restrained; and as the grey masses, crowding together in their excitement, breasted the last slope, the Federal infantry, in every quarter of the field, gave way before them; the ridge was abandoned, and through the dark pines beyond rolled the rout of the Eleventh Army Corps.

To the Federal head-quarters confusion and dismay had come, indeed, with appalling suddenness. Late in the afternoon Hooker was sitting with two aides-de-camp in the verandah of the Chancellor House. All was going well. A desultory firing broke out at intervals to the eastward, but it was not sustained.

The quiet of the Wilderness, save for those distant sounds, was undisturbed, and men and animals were enjoying the calm of the summer evening. It was about half-past six. Suddenly the distant cannonade swelled to a heavier roar, and the sound came from a new direction. All were listening intently, speculating on what this might mean, when a staff officer, who had stepped out to the front of the house and was looking down the Plank Road with his glass, exclaimed: 'My God, here they come!' Hooker sprang upon his horse; and riding rapidly

down the road, met the stragglers of the Eleventh Corps—men, wagons and ambulances—an ever-increasing crowd rushing in blind terror from the forest.

* * * * *

At the junction of the White House Road the order to halt was given, and the pursuit was stayed in the midst of the dense thickets.

There was a lull in the battle; the firing had died away; and the excited troops, with a clamour that was heard in the Federal lines, sought their companies and regiments by the dim light of the rising moon.

Jackson was already planning a further movement. Sending instructions to A. P. Hill to relieve Rodes and Colston, and to prepare for a night-attack, he rode forward, almost unattended, amongst his rallying troops, and lent his aid to the efforts of the regimental officers.

These arrangements made, Jackson proceeded to join his advanced line. At the point where the track to the White House and United States Ford strikes the Plank Road, he met General Lane, seeking his instructions for the attack. They were sufficiently brief: 'Push right ahead, Lane; right ahead!' As Lane galloped off to his command, General Hill and some of his staff came up, and Jackson gave Hill his orders.

* * * * *

Jackson then rode forward to reconnoitre, passing through the ranks of the 18th North Carolinas. A short distance in front the whole party—Generals, staff officers and orderlies—halted in the deep shadows of the silent woods. At this moment a single rifle shot rang out with startling suddenness. A detachment of Federal infantry groping their way through the thickets had approached the Southern lines. The skirmishers on both sides were once more engaged, and an officer of the 18th North Carolinas, seeing a group of strange horsemen riding towards him through the darkness—for Jackson hearing the firing had turned back to his own lines—gave the order to fire. The volley was fearfully effective. Men and horses fell dead and dying on the narrow track. Jackson himself received three bullets—one in the right hand and two in the left arm, cutting the main artery and crushing the bone. The story of Stonewall Jackson's military career finishes with that volley. He was carried from the field and the direction of the fight passed out of his hands.

During the next three days severe fighting continued, ending in Hooker's retreat across the Rappahannock with an army broken in morale and generals hopeless of success.

It now only remains for me to draw from these campaigns of Stonewall Jackson certain deductions which I trust I may be permitted to express. The first and most important deduction is that in war success chiefly depends on *the man*, not on *men*, that is to say, that if troops are commanded by generals with a genius for war the numerical superiority of the enemy matters comparatively little. The campaigns of Lee and Jackson are remarkable illustrations of this truth, for their forces seldom exceeded half that at the disposal of the Federal generals. Moreover, it cannot be contended that the enemy were inferior in courage or in physique, in personnel or material. They were men of the same race, but better armed, better clothed, better fed and in every way better equipped. Yet Jackson's gaunt, ragged, half famished battalions seldom failed to beat their foes. Herein lies a great lesson for us. If the Anglo-Saxon soldier, when

well commanded, can beat double the number of his own race, what may we not expect of him when opposed to men with less aptitude for war. Agincourt and Chancellorsville are imperishable examples of what he can do against great odds when he has confidence in his generals, and when his generals merit his confidence.

Another lesson that may be drawn from these campaigns is one which has already been taught us by the battles of the Peninsular War, namely, the heavy losses which the Anglo-Saxon soldier can bear without being driven from the field. At Albucera we lost nearly 50 per cent. At Sharpsburg the Confederates lost 9,500 out of 41,000 men. The memory of these bloody fights may well be borne in mind by us in these degenerate days when an hysterical public thrills with horror if we lose a few score men in assaulting a position, or during some necessary retirement.

Then again there is the supreme importance of secrecy in warfare. No General ever observed it to a greater degree than Jackson. Indeed, he may be said to have carried it to too great lengths, for he used often even to withhold his plans from his own staff and his second-in-command—a precaution which caused the Confederates dear at Chancellorsville after Jackson was wounded, for none knowing his plans confusion supervened in the Confederate movements. Had his successor pushed on at once to the United States Ford, as Jackson himself intended, there can be no doubt that the bulk of Hooker's right wing would have been taken prisoners the next morning. But apart from this error of excessive reticence, it is unquestionable that secrecy played an important and most successful part in Jackson's strategy. As his own staff seldom knew where he was going, or what were his plans till the very last moment, it is not surprising that the enemy were invariably mystified. Secrecy was all the more necessary in these campaigns, as in a country, where all were of the same race and spoke the same language, it was impossible to detect spies or stifle the indiscretions of enterprising journalists, and so news—true or false—spread rapidly from mouth to mouth. This is a point which applies forcibly to us in India. Largely composed as our armies are of Indian mercenaries and attended by a horde of followers, unless all necessary secrecy is strictly observed, the plans of the General-in-Chief will rapidly spread from his immediate entourage to the camp messes of the officers, and thence through the lines to the enemy. In a certain recent campaign it used to be a common grievance in camp that official reticence was carried so far at head-quarters that even general officers were sometimes kept in the dark till the last moment, but that apparent want of confidence was not without an object. I will give you an example of this. When a brigade had to move from Maidan to the Chamkanni country—a move which for certain reasons had to be completed within a limited number of days, it was of vital importance that we should not be delayed by resistance when crossing the water-shed, and consequently that the enemy should be misled as to which of three roads we intended to follow. By a judicious employment of camp gossip the enemy were mystified as to our real intentions, and those who were there will remember that, though the rear guard was much harassed on the march, there was no resistance on the actual line of advance. Had the enemy been aware of

our intentions, the wooded cliffs and spurs of the Kahu Range would doubtless have afforded great opportunities for guerilla warfare to the Afridi marksmen; but as they expected us to use the Lozaka route, there was absolutely not a soul to bar our march into the Masuzai Valley. Official reticence on this occasion at least was fully justified by the result!

The great use Jackson made of cavalry for screening his movements is another conspicuous feature of his campaigns. In all his famous flank marches there is nothing so remarkable as the way in which he spread an impenetrable veil of cavalry around him, while at the same time that cavalry kept him thoroughly informed of the movements of the Federals. In this respect he was most fortunate in having under his command such grand cavalry leaders as Ashby, Stuart and Fitzhugh Lee. History affords no finer examples of the cavalry screen than those of 1861 and 1862 respectively when the Valley troops marched to join Beauregard on Bull Run and when Jackson transferred his force from the Shenandoah Valley to Hanover Court House.

The most notable feature, however, in Jackson's methods of war was his great predilection for turning movements and flank attacks. Knowing full well the power of a blow dealt at the flank or rear, realising how sensitive an army is to whatever threatens its communications, Jackson always struck at that nerve centre of his foe regardless of risks to himself or of disparity in numbers, and confident that the blow would paralyse all the movements of his opponents as well as neutralise their numerical superiority. At Manassas with 20,000 men we have seen him march round an army, 80,000 strong. At Chancellorsville with 25,000 men he fell on the rear of 70,000 Federals in position. In the Shenandoah campaign of 1862 he repeatedly made use of the same method of compensating for numerical weakness. The teaching of Jackson's campaigns is then the overwhelming advantages conferred by mobility. Such mobility you can never have if perpetually tied to your trains. In our army we often think too much about commissariat and baggage and too little of the strategic objective. What does it matter if the soldier has to suffer cold and hunger for a night or two if by so doing he can pave the way to victory? To quote our Commander-in-Chief Sir William Lockhart himself, when it was represented to him the day before we attacked the Arhanga pass that the transport trains were miles behind, and that the men had only the food in their havresacks, his reply was: "The British soldier has starved before now, and anyhow we go into Maidan to-morrow," adding, "I, and not the commissariat officer, am responsible for the success of the campaign." Those words struck me much at the time, and their inner meaning is the more vividly impressed by study of Jackson's flank marches under still greater difficulties. Much may be done in peace to ensure mobility in war, and thus render possible the strategic methods of Lee and Jackson. To secure that end, there are two slight reforms I trust may some day be made out here. Every soldier in the field should always carry an emergency ration, and our obligatory mules should invariably carry one day's supply even if we have to reduce the proportion of ammunition with which they are now burdened.

I have said little or nothing about the personal characteristics of Jackson—his honest simplicity, his loveable disposition, his tender sympathy, his deep piety and faith, his strong sense of duty, because I feel that an analysis of his character and of its influence on his own conduct as a leader, as well as on the spirit of his troops would, to do it justice, require far more time than either you or I can afford.

There can, however, be no doubt that leaders of his type, the Cromwells, the Havelocks and the Gordons of history often arouse in their followers a devotion and enthusiasm which the colder, more worldly or more selfish temperament of generals like Moltke or Wellington is incapable of inspiring.

There is one final episode in the story of Stonewall Jackson which I am sure will interest you, as the last moments of a hero always exercise a fascination over the mind of man. A great writer has said that there is no death more sublime than that of a hero in the hour of victory, and just as the death of Nelson imparts a touching pathos to the glories of Trafalgar, so that of Stonewall Jackson lends a mournful interest to the splendid triumph of Chancellorsville. For there ended the short brilliant career of a general, who, though a Virginian, we English may proudly reckon among the greatest soldiers of our race.

"On May 10th at 11 o'clock Mrs. Jackson knelt by his side and told him that he could not live beyond the evening. 'You are frightened, my child,' he replied, death is not so near, I may yet get well.' She fell upon the bed weeping bitterly and told him again there was no hope. After a moment's silence he asked her to call Dr. Murphy. 'Doctor,' he said, 'Anna tells me I am to die to-day, is it so?' When he was answered, he remained silent for a moment as if in intense thought, and then quietly replied, 'Very good, it is all right.' About noon, when Major Pendleton came into the room, he asked who is preaching at head-quarters to-day? He was told that Mr. Lacy was, and that the whole army were praying for him. 'Thank God,' he said, 'they are very kind to me.' Already his strength was fast ebbing; his mind had begun to wander. Now he was on the battle-field giving orders to his men, now at home in Lexington, now at prayers in the camp, occasionally his senses came back to him, and about half past one he was told that he had about two hours to live. Again he answered feebly but firmly, 'Very good, it is all right.' These were almost his last coherent words, for some time he lay unconscious and then suddenly cried out—'Order A. P. Hill to prepare for action, pass the infantry to the front, tell Major Hawks,' then stopped, leaving the sentence unfinished. Once more he was silent, but a little while after he said very quietly and clearly 'let us cross over the river and rest under the shade of the trees,' and the soul of the great captain passed into the peace of God."

His Excellency the Commander-in-Chief said:

YOUR EXCELLENCY, LADIES, AND GENTLEMEN,—

I gather that the lecturer draws the following deductions from the military career of Stonewall Jackson:—

First.—That the Anglo-Saxon soldier, whether you call him an American or an Englishman, can face greater odds, if well led, than the soldier of any other race. Well, we have proved this in the past, and I hope we may continue to prove it in the future.

Second.—That the Anglo-Saxon soldier can stand heavier punishment, can sustain severer losses, without being driven from the field, than any one else. But this, I think, is almost included in deduction number one.

Third.—The importance of secrecy in warfare. This is an axiom which no one will dispute. Perhaps the greatest curse that can be inflicted on a general or army in war, and also I may add in peace, is a talkative staff officer.

Fourth.—The value of the cavalry screen and of turning movements. The value of this has been appreciated ever since man could ride and since war began in the world, but it is not always possible to utilise them.

For instance, across our North-Western border we have to deal with an enemy absolutely without a baggage train, each man carrying his food and his ammunition on his back. Such an enemy cares nought for his line of communication, and when we painfully ascend a precipitous mountain, in order to turn his flank, we find that flank vanished into thin air, while the enemy is again in position far away. Between us and him are perhaps some burning villages, and while we prepare to place our men in bivouac for the night, he is making his arrangements to save us from the monotony of unbroken rest.

I agree with Colonel Barrow in thinking that we are inclined to set too much value on ammunition and neglect our provisions; in other words, we are apt to fill our men's pouches at the expense of their stomachs. But here again we must be governed by the conditions of the ground and the character of the enemy.

I remember, as a Brigadier-General, going to Sir H. Macpherson when he was on his death-bed in Mandalay in 1886. His last words were "do not encumber your men with too much ammunition. Considering the quality of the enemy and the nature of the country, 20 rounds in the men's pouches should be enough, and always make them carry food with them." Now that was what he said and what I carried out to the comfort and advantage of my men. Sir Herbert Macpherson would never have said so as regards Afghanistan, a country of rugged mountains, with a resolute and hardy enemy, and where ammunition columns would be liable to be kept back by natural obstacles.

Everything depends upon the special circumstances of the occasion, and one cannot lay down general principles to meet all cases. I don't think I have anything more to say except to convey to Colonel Barrow, on your behalf, our cordial thanks for his very interesting and instructive lecture.

Colonel Hutchinson said:

YOUR EXCELLENCIES, LADIES, AND GENTLEMEN,—

If I may be permitted some brief remarks on the admirable address to which we have just listened, I would say that it seems certain from the applause, with which you have received it, that you share my

sentiments at this moment in regard to Colonel Barrow; which are—first, sentiments of gratitude for the excellent and instructive précis which he has given us of the life and work of that great soldier and good man, General Stonewall Jackson; and, second, of regret that his sketch has not been a little longer and fuller. Like *Oliver Twist*, I feel inclined to “ask for more”.

At the same time I am well aware that the time and conditions, which limit a lecturer in Simla, do not afford opportunity for more than a bare outline of the facts to which his essay relates: and this being so, I think that it is a tribute which we may well pay to Colonel Barrow to say that it is very clever of him to have compressed so much graphic description, such clear instruction, and such well-chosen deductions, dealing, as they do, with incidents which extend over two years,—two years of crowded life and death,—into a simple narrative related in something less than one hour.

This brings me to the only comment which, on this occasion, I feel justified in making, which is, that, while we all come to these lectures expecting to be interested and instructed, we should try to leave them determined not to be satisfied with the short and clever addresses to which we listen here, but resolved rather to amplify them for ourselves when we get home, to fill in the outline that has been presented to us, and to work up the details of the picture, by reading and study in the quiet of our own rooms. That is the true way to turn these lectures to practical account, and to derive the greatest pleasure and advantage from them. We should regard them, in fact, as a *hors d'œuvre* prepared by a skilful *chef*, Colonel Barrow, in this instance, whose design is to whet our appetites for information and inquiry, and to urge us to read and reflect, and form conclusions, for ourselves.

It used at one time to be considered that a vigorous frame, combined with a modicum of common sense, would suffice, if not to make a great General, at least to see the ordinary soldier with credit through any reasonably tight place. Books were very much tabu'd, Staff College Certificates were regarded with suspicion, and examinations of every kind were held in holy horror. Well, I need not tell you that that is all changed now. In my official position I probably have as good opportunities as anyone else of noting the spirit that is abroad in our Army where professional reading and Military education are concerned, and I can say with confidence that officers of all grades in the present day are as keen to study professional works, as ready to discuss professional subjects, and as anxious to pass good examinations, as Napoleon himself, or any other advocate of Military education, could possibly desire.

Colonel Barrow has told us what Stonewall Jackson himself did in the way of study, and what he went through in the way of education: and you will have noted that, what with the strict and severe four years' preparation at West Point, the practical experience gained during two years' campaigning and fighting in Mexico, and the earnest study which lasted for ten years while he occupied a professorial chair at the Virginia Military Institute, few soldiers could have entered the

lists better fitted for the fight than he was. The wars of Napoleon were his constant study, and his brilliant conceptions, his daring methods, his astonishing marches, and his masterful strokes, by which, during the ever-famous Valley Campaign in the spring and summer of 1862, with forces often by 4 or 5 times inferior to those of his opponents, he paralyzed the armies of the North, repeatedly won remarkable victories, and spread consternation among his foes, show conclusively that he had studied his great model to some purpose.

But I would ask you to note that what is true of Jackson in this respect, is true also of most of the leaders engaged in this great Civil War. It has sometimes been supposed that when hostilities broke out, heaven-born Generals sprung up like mushrooms, who, without any previous training or special study, led their men to battle with all the skill and confidence of experts. This was not, however, the case. All those who rose to high positions during the great struggle, were, almost without exception, men who had been carefully trained at West Point, and had graduated in the art of war during the three years' struggle with Mexico, in 1845-48. In this list come Grant and Lee, McClellan, Sherman, Sheridan, MacDowell, Burnside, the two Johnstons, Hooker, Meade, Buell, Pope, Rosecrans, Longstreet, Beauregard, Lyon, Halleck, Hunter, and many others who could be mentioned. All these had been through the mill: and a very severe mill it was. The course at the Military Academy at West Point lasted *four* years, with only one vacation during all that time: the discipline was extraordinarily strict, and the examinations most searching and severe. All failures were mercilessly weeded out, and it is small wonder, therefore, that those, who eventually came through the ordeal successfully, should have been men stamped with that Hall Mark of genuineness which only thorough study and honest work can bestow.

That I think, Your Excellency, Ladies, and Gentlemen, is all I have to say. The topics which might be discussed in connection with this war of giants are of course endless, and of absorbing interest: such, for example, as the danger of civilian interference and control where Military operations are in question: as illustrated by the mischief wrought by President Lincoln's conflicting counsels, and ill-judged dictation to McClellan: the calamitous risks and losses incurred by Nations and States who fail to recognise that the surest guarantee for peace is to be always prepared for war: the strategy of the campaign, or rather campaigns, for it was a struggle spread over many years: the tactics that succeeded and the tactics that failed: the important part that Railways played in the War, and always will play in future wars in civilised countries: and so forth. All these furnish subjects for fruitful discussion, and profitable examination.

But bearing in mind the good old adage "*Ne sutor ultra crepidam*," I confine my remarks to that heading which more nearly concerns my own work, *vis.*, the education of officers, and the necessity for constant training in peace time up to a high standard, if we are to expect the best results in time of war. In Stonewall Jackson, as put before us in this all-too-short sketch by Colonel Barrow, we see personified and idealised the results that may be achieved by such reading and preparation as he made the rule of his life: and we may

be encouraged by his brilliant example to lay to heart the lesson which in this respect his career conveys, and endeavour, each of us in his sphere, to go and do likewise.

Major-General Sir E. Collen proposed a vote of thanks to His Excellency the Commander-in-Chief for his kindness in presiding, and the proceedings then terminated.

THE TACTICAL PRINCIPLES AND DETAILS BEST SUITED TO WARFARE ON THE FRONTIERS OF INDIA.

BY CAPTAIN E. PEACH, 3RD MADRAS LIGHT INFANTRY.

Motto :—C'est à cette situation qu'il s'agit de porter remède.—PIERRON.

PART I.—INTRODUCTION.

1. NECESSITY OF AN OFFICIAL GUIDE FOR PEACE TRAINING.

Campaigns, on a larger or smaller scale, are so frequent on the Frontiers of India that war, with one or other of our more or less savage neighbours, may almost be said to be our normal condition. We have been engaged with no civilised enemy since the Crimea. Yet, up till the issue of the 1896 edition of Infantry Drill, no mention at all was to be found in our Drill Regulations of how to train our troops for the very conditions of service they were most likely to meet.

There is, however, some explanation for this. Civilised warfare is a very much more serious matter than any frontier campaign against ill-organised and ill-armed savages. It is the life and death struggle of nations, and although we have happily been free from it for many years now, other nations have not been so favoured. It is only natural therefore that, even with us, it should have received more attention than Savage Warfare, and that, up till quite lately, it should have been considered that the broad principles of the Drill Regulations, if intelligently applied, were sufficient for all kinds of warfare.

Again, the diversity of the conditions, under which our numerous small wars take place, renders it very difficult to lay down clear and well-defined principles, to embrace them all, such as, owing to the united study and experience of the ablest soldiers of all nations, we have for European Warfare.

The Drill Book is written for the whole army all over the world, and it would perhaps be impossible to include in one small treatise all the various modifications that are necessitated by different classes of enemy and theatres of operations. Civilised Warfare is the only kind for which all our army, wherever stationed, must always be prepared, and Civilised Warfare must, therefore, firstly be studied.

The introduction, however, into the present edition of Infantry Drill of a small section on Savage Warfare (*vide* Part V, section 123) shows that it is recognised now that certain modifications, occasioned by savage enemies and the different conditions of Savage

Warfare, are so important that they must be studied separately, and this section is evidently a step towards some authoritative principles being laid down.

But it is since the issue of the 1896 edition of Infantry Drill that it has been most conclusively shown that, in future, it will be nothing short of dangerous to put our troops into the field against certain classes of enemies in India, with only the instructions and formations of the Drill Books to guide them. The present section on Savage Warfare merely draws attention to the fact that formations must be adapted to the nature of the enemy, and the manner in which he is armed, and gives us an indication of the precautions to be taken against a badly-armed enemy who attempts to close with us in the open. But it is of little or no assistance to our troops fighting in the hills or jungles of the frontiers of India, where totally different conditions of enemy and armament obtain.

In a series of arduous campaigns during the past few years we have learnt that valuable lives might have been saved, and mistakes prevented, in our frontier wars in India, had our officers and soldiers had a guide in peace, such as they have for Civilised Warfare, giving them some idea of the difficulties they might expect to meet, and the best means of overcoming them.

Attention has, accordingly, now been thoroughly drawn to the subject, and we have learnt in what respects the formations of Infantry Drill must be modified or supplemented. There is no doubt, therefore, that the time is ripe for the issue of certain broad rules and instructions for training for Indian Warfare in time of peace.

Whether these should appear as an integral part of Infantry Drill, or as a second part or volume, or merely as an Indian supplement, as in the case of the Musketry Regulations, is immaterial. It will probably be found best to confine the present volume entirely to Civilised Warfare, and issue a short supplement on Frontier Warfare for India.

But, even if we confine our attention to the Frontiers of our Indian Empire alone, it will be evident that the arrangement of the subject will present great difficulties.

Our borders extend from the Persian Gulf on the west to China on the east, and, within this immense area, many different races and countries are comprised. Some no doubt involve less serious operations than others, and some will probably trouble us little, if at all, in the future. But each must have its meed of consideration.

The best method of approaching the task appears to be to follow the example already set before us in the Drill Regulations, and, allowing for the diverse circumstances that every kind of warfare presents, eschew all hard and fast rules, and restrict ourselves only to broad and simple guides.

Without, therefore, arguing the soundness of, or adducing lengthy explanations for, all the views advanced in this paper (which, indeed, space alone would preclude), I have endeavoured to bring together the principles and formations that experience has proved, have served

us best in the past, in dealing with the different tribes on the Frontiers of India, and which it will accordingly be necessary for our troops to practise in future in time of peace.

Various conditions of ground, and the armament of the enemy, will necessarily modify our Tactics, and these must be taken into consideration, and kept in view, in all our preparatory training.

2. NATURE OF FRONTIER SERVICE.—THE ENEMY AND THE TERRAIN.

A civilised country possesses made roads, bridged rivers, and, almost always, maps. The forces on both sides stand more or less on an equality as regards mobility, supply, and transport. Hospitals are, to a certain extent, protected, and the wounded will not be destroyed and mutilated if left to fall into the hands of the enemy.

Across the borders of India all this is changed.

The countries are roadless, barren, steep, and rugged, or else clothed with thick scrub, or jungle. Generally no maps at all are to be had, and the ground is quite unknown to us, while every inch of it is familiar to the enemy.

He himself is lightly clad and unencumbered by any baggage, tents, or trains. He can move with the greatest freedom and rapidity over the hills in any direction, to oppose us in front, or fall on our flank, transport columns, or rear.

If he finds us too strong for him to stand against in a pitched battle, he melts away from a direct blow, only to return to the attack in greater numbers, and with the greatest determination should we retire. All frontier tribes seem to recognise, in common, the disadvantages under which a regular force labours in retirements; they also attribute them to fear, and invariably follow up.

In his dirty grey rags a frontier enemy is exceedingly difficult to see, much more to hit, as he dodges and takes cover behind rocks and sangars of much the same colour as himself. He is accustomed to his weapon, whether it be rifle or sword, from his youth up, and can use either with deadly effect.

Many tribes are now armed with a proportion of long range rifles—Sniders, Martini-Henrys, and even Lee-Metfords, and are very quick to realise the benefit of such arms. This fact has made an enormous difference in Frontier Warfare.

Well-armed tribesmen trust a great deal more to the efficacy of fire power than the former system of Ghazi rushes, and, marking our advance from high up, they make deadly shooting at any formed bodies of our men, hardly ever exposing themselves at all. Others less well-armed, combine fire power with shock tactics to a remarkable extent, and these are still formidable by reason of the desperate courage with which they seek to close with our men. Their skill at hand-to-hand fighting makes them dangerous antagonists at close quarters, while their hilly or forest-clad country offers constant opportunities for making their rush suddenly from behind cover. Such,

very briefly, is a description of the general conditions we have to consider in drafting principles for training our men for service across the border, and it is evident that a very high state of efficiency and discipline is required to successfully cope with them.

3. SPECIALLY SELECTED, LIGHTLY EQUIPPED MEN.—THE TRAINED SCOUTS.

A British soldier, dressed in the summer scale of clothing, carries in service marching order—38½ lbs.

This includes his Lee-Metford rifle, one hundred rounds of ammunition, his accoutrements, and all clothing that he wears. A native sepoy with Martini-Henry rifle, and seventy rounds, carries, on an average, 41½ lbs., all told.

It is very evident that no amount of training will enable regular infantry, encumbered like this, to meet the hillman on his mountains on anything like equal terms. We must always be at a disadvantage when acting against an enemy carrying nothing but his rifle, and a few cartridges, barefooted, or shod only with grass shoes, and dressed in the loosest of clothing.

The value of picked infantry, lightly equipped, was so firmly established in the Tirah Campaign that it is certain that the extensive employment of such men will be a feature of all future expeditions.

They were called "scouts" in Tirah, and, though the name is perhaps somewhat misleading, seeing that they were used as a fighting unit, quite as much as for scouting, they will, in all probability, retain that appellation; although "skirmishers" would perhaps better describe them.

They had the advantage over the rest of the infantry, in that they carried only forty rounds of ammunition, wore no accoutrements, were dressed in loose khaki, and cut their trousers off at the knee, thereby gaining the greatest freedom in moving up and down hill.

Since the Tirah Expedition, although all are agreed as to the advisability of some tactical organisation for making use of trained scouts, opinions have been much divided as to the form the organisation should take. "*Battalions*" of trained hillmen have been suggested, or "*light companies*," or, finally, "*company scouts*."

Space will hardly permit of the discussion in detail of the merits and demerits of these various systems, but a very slight consideration will, I think, be sufficient to show that neither the light battalion, nor the light company, would entirely meet the case.

Apart from all considerations of invidious distinctions and unpopularity, it must be remembered that the employment of the scouts as an independent tactical unit, as organised in Tirah, is only one of their many uses and advantages.

The presence of a proportion of trained scouts would be an invaluable adjunct to any body of troops, in whatever situation it might find itself on service on the Frontier.

Any company taking up its position as a piquet should advance with its front covered by a skirmishing line of picked shots; still more essential are these specially selected, active, men in covering the withdrawal. Similarly, any isolated party will have its chances of escaping disaster greatly increased by having picked men to scout for it.

In addition to this, as will appear in the sequel, the trained scouts may, on occasions, take much of the actual fighting, forming sometimes the first line in the attack, and the last in a retirement.

No battalion or company could be expected to allow its very fighting to be done for it by outside battalions or companies.

But perhaps the strongest reason of all against picked battalions or companies is that in such fatiguing and harassing duties as covering a retirement, or posting outlying piquets, etc., it is acknowledged that one unit, however "specially selected," can hardly be expected to take these duties day after day without relief, or, even in the case of a retirement, to form the extreme rear for any length of time; the whole idea of retiring in face of a hill enemy is to withdraw by successive lines, presenting fresh troops to the enemy at every available opportunity.

Similarly, when piquets are used round a camp, each battalion looks after its own front and needs its own picked men.

In a word, all portions of a force in Frontier Warfare must take their share of all duties and all difficulties and dangers, and therefore, unless our ordinary regiments are to be reduced to the condition of mere impedimenta, needing protection, each must, in self-defence, train and use its own picked scouts.

And this would still be the case even if a few battalions of picked hillmen were raised and formed part of the force.

Should it be required for any particular reason, such as forming the point of the advanced guard in country unsuited to cavalry, or for a stalking party to intercept firers into camp, or for a special reconnaissance in the hills, there could be no possible objection to *massing* the scouts of a battalion, or even, in extreme cases, those of two or more battalions, and using them, in this manner, as an independent unit.

The full scope of the tactical employment of the scouts will appear from the following pages, but, seeing that their employment influences the whole question of tactical formations so greatly, it was thought necessary to refer to them here, so that it may be quite clear what is meant when "trained scouts" or "company scouts" are referred to hereafter.

The idea of these picked men is that of getting on somewhat more equal terms with a hill enemy on his own ground, and, seeing that we cannot hope to do this with our entire battalions, certain men of each company should be specially selected in time of peace for their activity, sight, bearing, and shooting; they must all be marksmen or, at least, first class shots.

These men then receive a special training, in order to still further cultivate and develop the faculties which caused their selection. Their powers of endurance, wind, bump of locality, intelligence, and habits of observation can all be improved by training until they are finally classed and passed as *trained company scouts*.

Whether any special inducement, such as scout pay, will be offered in the future need not be considered here, but they should at least obtain some recompense, such as exemption from certain duties in barracks; they should also wear a distinctive badge.

Finally, it must be remembered that the advantage of the presence in the ranks of such men as the trained scouts here contemplated is by no means confined to hill warfare on the Frontiers of India.

The scheme would be a distinct military gain, whatever the enemy or conditions.

The actual training of the scouts is referred to in Part VII, "Training of Troops." It can only, of course, be fully carried out at present by battalions stationed, during some portion of the year, in the hills, but there is no doubt that by such units the scheme, once officially promulgated, would be enthusiastically taken up, both by officers and men, especially if it were understood that the chances of service were thereby increased.

PART II.—MARCHES.

1. PRELIMINARY OBSERVATIONS.

The question of marches, in Frontier Warfare, demands greater attention, in a tactical sense, than in Civilised Warfare. A savage enemy, owing to his superior mobility and knowledge of the ground, has far greater chances of falling suddenly on the line of march, or taking it in flank, than a European enemy has. Moreover, the ground itself is generally all in his favour.

Owing to the absence of made roads, the route in Frontier Warfare generally follows a ravine or along the bed of a river or over a mountain pass.

Being thus in a defile, the column is almost always commanded from heights on both sides of the road, and is open to a rush from behind cover at almost any point.

Wheeled transport being impossible, everything has to be carried on pack animals, and even these can, usually, move only in single file. This results in a long and very vulnerable baggage train, and the march degenerates practically into the passing of a convoy through an enemy's country, the inhabitants of which are, in the highest degree, active, enterprising, and fanatical.

It follows therefore that columns in touch with the enemy should be as small and compact and as lightly-equipped as possible. All

baggage, that can possibly be spared, being left with supporting columns at least one day's march in rear.*

But, even with all possible reductions and precautions, the column will still stretch out to miles in length, and this state of things is that which has mostly to be considered in Frontier Warfare.

Under the circumstances it will be readily understood that the rate of march must be very slow—seldom more than one mile an hour. Blocks and checks will be frequent, and, as gaps are certain to occur, every possible endeavour must always be made to keep the transport closed up, and to march on as broad a front as possible. This is a most important duty of transport officers and baggage guards.

Touch must be maintained, as far as possible, by mounted orderlies or by signalling.

Where possible, transport animals should always go in droves, and, in any case, mules and ponies should be *unlinked*. The system of linking three mules together is one of the most frequent causes of accidents on a hill road. An animal carries its load much easier if allowed to go free.

Frequent halts of the head of the column will, in bad country, be necessary to enable rear echelons to close up, but a halt should always be made on the far side of an obstacle, not on the near side, in order to avoid a block at the entrance. No halts for rest, either of animals or men, need be arranged for.

No intervals need be preserved on the march between either troops or baggage columns.

Only short marches, varying from 4 to 8 or 9 miles, according to the size of the column, and condition of the track, can be made in one day. It is most essential to get the baggage and rear guard into the new camp as early as possible. As dusk comes on, the boldness and enterprise of the tribesmen increase greatly, and the situation of the transport column and rear guard, if overtaken by darkness, is one of considerable peril.

* Much might be written on the subject of the size and distribution of Field Forces for Indian Frontier Campaigns. It is hardly within the scope of this essay.

But one point must be noticed, and that is, that there is undoubtedly a maximum of strength beyond which a force loses in mobility all that it gains in fighting power. With a large number of animals, only a very few miles can be covered in the day, especially in winter if the column is to get in before dark. Moreover, the baggage column becomes more difficult to protect as its length increases. On the other hand, in Frontier Warfare, the display of a large and powerful force, is often indispensable, not only against the immediate enemy, but also to overawe neighbouring tribes, and prevent their rising and joining in.

The best way out of the difficulty appears to be to mobilise and have collected, at different points, at the entrance into the enemy's country, such ample supporting, or threatening forces, as any developments of the situation may possibly require, but to actually push forward towards the enemy, or into difficult defiles, passes, etc., only small lightly-equipped columns of *about* a strong mixed brigade each, with the very best animals and drivers, and to put these into the country at as many different points, and by as many different routes, as possible. The maximum force that can be manoeuvred is one with not more than about 3 000 to 4,000 quadrupeds of all kinds. Hardly any circumstances could arise in which a combination of such brigades could not attain the object of the expedition, or, at any rate, hold their own easily, till the supporting brigades could reinforce them.

The men in camp also are in need of their kits and blankets and food, and the animals must get their loads off and be fed and watered as soon as possible—especially if the march is to be resumed next day.

All movements in the dark are fraught with great difficulty and danger owing to the precipitous nature of the ground, and, as a general rule, it may be laid down that if any portion of a column does find itself overtaken by night in difficult country, and with an active enemy following up, it should halt where it is, and, under the initiation of the Officer Commanding the Rear-guard, the best arrangements possible should be made for defence for the night.

2. PROTECTION OF THE MARCH.

In hilly countries the march lying, as already explained, in a ravine or bed of a stream, it is usually necessary to crown the heights on either side, in order to pass the transport through in safety. This is the main principle of protection, and it applies to all kinds and descriptions of hill warfare.

When the ground will admit of it, bodies of troops would make their way over the hills, parallel to the column, as flank guards, sometimes the greater portion of the whole force being thus employed, leaving the road to the baggage, with its advanced, rear, and baggage guards only. But in broken ground this will not often be possible. In this case flanking parties or piquets must be posted on peaks, spurs, and eminences at intervals, commanding the route, and left there while the whole column passes through.

The advanced guard.—The duty of providing these flanking parties falls on the advanced guard in addition to its own duties of clearing away all opposition in front.

This, therefore, must be remembered in calculating the strength of the advanced guard. As in Civilised Warfare, no hard and fast rule for this can be laid down, but in hilly country, when opposition to the march may be expected, 1½ or 2 battalions in a force of one mixed brigade are, generally speaking, not at all too many for the duty.

The composition of the advanced guard will mainly be infantry with sappers or pioneers. Often the road has actually to be made in places to enable the baggage animals to be passed over. Sappers are also required immediately on arrival in camp to make roads or ramps to water, bridge streams, etc.

Cavalry.—In country suited to their action, such as the broad valleys of the Mohmand country, cavalry are of course invaluable in the advanced guard, just as in Civilised Warfare. They can reconnoitre to considerable distances ahead, and prevent annoyance to the column by keeping the enemy in the hills. But in really mountainous country, such as Tirah, where cavalry cannot be used, their place must be taken by trained scouts, who would act as the eyes and ears of the force. The companies of the advanced guard would thus always be preceded by their trained scouts, but, in some cases, all the scouts of the leading battalion of the advanced guard might be massed under a selected officer to form the "point" of the van guard.

Guns.—Against a hill enemy the guns come into action as early as possible, and they are, moreover, of the greatest assistance in helping to clear the heights which have to be piqueted. It is, therefore, sometimes considered advisable to have a mountain battery with the advanced guard, but, as has been already explained, when once on the march, there is practically no interval between the advanced guard and the main body; and as, in the hills, the guns can get good views and ranges, and can fire freely over the heads of the infantry, it will generally be sufficient to have the batteries well up to the head of the main body. Here they are best placed for all eventualities and are, moreover, at the immediate disposal of the General Officer Commanding the Column.

If it is known that the line of march will have to be piqueted, the advanced guard should, without going too far, start about one hour before the time ordered for the main body.

This prevents delay in filing out of camp. The advanced guard can only move slowly at first, feeling its way, and often having to make the road or take certain heights in force before leaving flanking piquets there.

Touch should be maintained with the column by signalling, connecting bodies, or, in suitable ground, cavalry.

The duties of the advanced guard in case of attack are referred to in Part IV, "Contact with the enemy."

The obligatory mules of the advanced guard should follow it. Should the leading advanced guard battalion become much used up in providing flanking piquets, it must be reinforced from the head of the column.

On arrival in camp the advanced guard must move across it, and throw out temporary piquets to protect the columns filing in. Some of these can often be taken by the cavalry in the day time. Piquets are also placed by the advanced guard over the water-supply, forage, etc.

Flanking piquets.—Although, except on an open plain, or in thick forest, flanking piquets will almost always be required to protect a march in Frontier Warfare, still the strength and positions of these and their distance from the line of march will depend a good deal upon the nature of the enemy with whom the force is engaged.

Against indifferently-armed tribes, who are known to push their attack home, and come to close quarters, it is necessary to have strong piquets, not less than a company of 70 to 80 rifles*, and sometimes more; but as, in this case, the column has not usually to fear losses from long ranges, the piquets can be nearer and fewer. With tribes like the Afridis and Orakzais, armed with long range weapons of

* *Notes.*—A "company" in Frontier Warfare is misleading. Regiments get depleted till a company may often number only 40 or 50 rifles.

precision, it has been found by experience that, as long as the piquet is not commanded by higher ground in the immediate vicinity, it is quite safe, even if only composed of 10 or 12 rifles. It may also be safely put out to the greater distance necessitated by the armament of the enemy. One company may thus be able to furnish 2 or 3 road piquets, the surplus being collected as support near the road. There should always be an officer to every group of piquets to collect them on withdrawal and take them into camp.

The only real danger to these piquets is when they begin to retire from the high ground. As soon as their post is abandoned, it is immediately occupied by the active enemy who fires down on the piquet. But it is not the strongest piquets that have been found to come off best in these cases. The more men there are in the piquet, the greater the target offered to the enemy, and the more difficult the withdrawal.

What is required is fire from *supporting bodies*, and a few cool picked men left on the peak or ridge till the last possible moment.

As regards support, the rear guard is present at this juncture, and if a piquet is seen to be in difficulties, a party is sent out from it to help it in.

Flanking piquets differ from the piquets put out round a camp (*vide* Part V, Security) in that the former are only out during the day, and are, or should be, in sight of the column, or supporting troops, while piquets round a camp remain out all night, and are completely isolated, and unsupported. These latter can never therefore be reduced in strength quite as low as road piquets.

Flanking piquets should nevertheless invariably build a sangar or stone wall for their protection immediately on arrival at their post. This sangar should be as inconspicuous as possible, and large stones should be placed at irregular intervals along the top. A sentry should be posted inside the piquet, who should look outwards towards the enemy, *not* at the column passing below. He should avoid showing himself as much as possible (as should all the piquet), and he may sit down, provided his view is not thereby interfered with.

The piquet should never pile arms, but each man should keep his rifle beside him. If the ground is commanded by other ground close by, a few rifles should be detached from the piquet to hold it.

In taking up its position a piquet would advance as a company in the attacking line (*vide* page 22, Formations), preceded by its "trained scouts." It has already been noticed that it will sometimes be necessary to order up two or three companies to take a height before leaving a piquet on it.

The piquet retains its position till the rear guard arrives abreast of it, when it is withdrawn, down to the road, by signal from the Officer Commanding the latter.

Every piquet posted in hill warfare should have signallers with it, and also one or two light field stretchers.

Flanking piquets are provided from the *main guard* of the advanced guard.

The main body.—As the duties of a column on the march in the hills are mostly those of an escort to a large convoy, as already explained, and as the greater portion of the tooops will usually be swallowed up in advanced, rear, flank, and baggage guards, it is evident that in many cases the main body will eventually come to exist only in name, the parties offering or meeting resistance being at the head and tail of the transport. There will thus remain, as the main body, only the guns and their escort and reserves to the advanced and rear guards. If therefore a stand of the enemy is expected, it is very necessary, as will appear later, to endeavour to camp, so that the baggage may be left behind till the fight is over.

The baggage column.—Every unit should be followed by its first reserve ammunition, its water mules, its medical and signalling equipment and cooking pots, and, if the weather is cold or wet, its great-coats.

All the rest of the baggage comes together in the *baggage column*. The field hospitals, or 2nd reserve ammunition lead in this, according to circumstances, and, after these, the baggage of units follows in the order of march of the units in the column. Lastly, come the commissariat godown mules.

A baggage guard, of about 30 or 40 men under an officer, is told off from each regiment, whose first duty is that of re-adjusting loose, fallen, or displaced loads, and keeping their animals closed up. Protection is otherwise provided for.

Special baggage guards for the field hospitals and the commissariat must be told off from the battalion which forms the rear guard. This is most important and should never be neglected. In difficult country baggage guards must be increased.

The men should move by parties of 4 or 5 together along the baggage, never singly.

Once started, the baggage should never be stopped for any fighting that may be going on. It should carry on at a steady pace. Nothing tires the animals so much as standing loaded. The pace should not be hurried or the animals driven, so that they break into a trot.

Rear guard in advance.—Although, in an advance, the advanced guard and flanking parties may be expected to clear the enemy off the line of march to a great extent, still the rear guard is liable to be followed up and attacked, and must therefore be strong enough to hold its own till support can arrive from a considerable distance.

In a brigade it would not ordinarily be less than $\frac{1}{2}$ battalion, and in some cases it may be more.

It is the duty of a rear guard commander to see that no baggage is left behind, and to withdraw the flanking piquets as he arrives abreast of them.

This is generally done by signal, and unless the rear guard is engaged, the flanking piquets are usually allowed to work their way along the baggage to the front.

They thus get into camp earlier and form an additional protection to the baggage *en route*. But they are absolutely at the disposal of the Officer Commanding Rear Guard, should he consider that the rear guard requires strengthening. On the other hand, if any piquet is seen to be in difficulties, the Officer Commanding Rear Guard sends up reinforcements from the road to cover its retirement.

The main body should never lose touch with its rear guard under any circumstances.

Communication should be kept up by signalling, or by cavalry orderlies, a few of whom should always be placed at the disposal of the rear guard commander. Should the rear guard be seriously attacked, it must halt and hold its ground, and the nearest troops must be sent back to help it.

The conduct of the rear guard in a retirement is considered in Part IV, "Contact with the enemy."

Marches in the jungle are considered in Part VI.

PART III.

RECONNAISSANCE.

Reliable information of a frontier enemy's movements and probable intentions is, from the nature of that enemy, almost impossible to obtain by the methods employed in European Warfare.

Small patrols or reconnoitring parties would be almost certainly cut off and destroyed, and there is very little to observe and report on.

A frontier enemy has no camp to be watched, and is not confined to roads or paths, or any particular line of advance. He gathers for a purpose and as suddenly disperses.

Having no commissariat or transport arrangements, he cannot keep the field, in numbers, for any length of time, and it is therefore impossible to maintain "contact" with him in the European sense of the term.

The chief, and indeed almost the only, means of obtaining early information as to his intentions and preliminary movements is from the reports of natives of the country—spies, friendlies, etc., who are acquainted with him and his habits. But military reconnaissances are none the less constantly necessary to secure our own force from surprise, and to make us acquainted with the ground. Moreover, once the enemy is known to be collected, it is only by means of military reconnaissances that we can estimate his numbers and observe his position.

In the desert, or open country, cavalry and camelry can scout to great distances in all directions, and give early notice of any gathering in force, but in the hills and jungles, where cover and obstacles abound, reconnaissance is much more difficult, and must be made by fairly strong bodies of troops. It cannot be pushed so far, and more caution must be exercised in order not to be cut off or ambuscaded. Military reconnaissances in a border country usually take the form either of an officer, with a strong mounted escort, often supported by infantry riding out to points of vantage, from which, with the aid of telescope or field glasses, he can overlook the country; or else of a reconnaissance in force of mixed troops.

Observation is of course also carried on, without intermission, by all outlying piquets who signal in any information obtained.

Even when no outlying piquets are furnished for the purposes of security, it will nevertheless generally be found necessary to keep out at least one strong observation piquet *by day* on some commanding point.

Cavalry, if present with the force, should always be pushed out every afternoon along all possible lines of attack, in order to give notice of any bodies that may have collected with a view to an attack at night-fall. If the country is so rough and hilly that mounted men cannot be used, then "trained scouts" will be employed; small parties of such picked men may be used where ordinary infantry would be in great danger of being cut off.

The information obtained of an enemy's position is generally best furnished by a short report, illustrated by a landscape sketch.

In a reconnaissance of new country the important points to be kept in view are: camping-grounds, water, hill-tracks, paths, or roads, and their practicability for transport. Positions and how turned, rear guard positions, etc., according to the circumstances of the case.

When the enemy is known to be occupying a position, a reconnaissance in force may be expected to attain the following ends:—

- (1) It will show the extent of his position, standards can sometimes be counted, and some idea of his numbers obtained.

(General Egerton considers 40 or 50 men to a standard a fair estimate.)*

- (2) It discloses the weak points of the position; the difficulties of ground over which the attack must be made; the best flank to attack; any possibilities of getting on the enemy's line of retreat, cutting him off, or of cavalry pursuit.

A reconnaissance in force should never be pushed too close to the position, nor remain out too late in the day, or heavy losses may occur in the retirement to camp.

*NOTE.—"Hill Warfare on the North-West Frontier of India." By Brigadier-General C. Egerton, C.B.

PART IV.—CONTACT WITH THE ENEMY.

I. THE ATTACK.

A frontier enemy, having no capital to be taken, nor base from which he can be cut off, and thus compelled to surrender, and very little personal property which he is unable to remove, it is obvious that the quickest and in every way the most satisfactory method of bringing him to terms is by the loss of his fighting men in battle.

Our first object, therefore, should always be to induce him to make a stand, if possible, or even better, to attack us in masses in the open.

Of the latter kind of fighting, Egypt has furnished us with many examples from the time of Napoleon I downwards, and the history of Savage Warfare in Egypt is a record of campaigns ended in a few short weeks by one or two crushing defeats inflicted on untutored savages who hurl themselves *en masse* against a disciplined foe.

But on the frontiers of India such opportunities for our arms are rare. Desperate Ghazi charges are certainly made at times, but generally from behind sangars or other cover, when there is little time for even the magazine rifle to do very much execution before the fanatics are upon us. In almost every case, when such attacks are made in India, the ground is all in favour of the enemy, the attacks taking place in hills or forests, or, as happened at the Malakand in 1897, under cover of darkness.

But in all these cases, trying as they may be to the troops, the enemy can, at least, always be made to suffer to a very considerable extent, and, once his attack is spent, the defeat entailed upon him becomes a disaster, from the demoralisation of which he will not readily recover.

Generally, however, in Indian Frontier Warfare all we can hope for, in the way of a fight, is a defensive stand of the tribesmen upon some ridge or crest line of heights, where they are completely covered by sangars, or the natural rock. The likelihood of such a stand and its probable position should, under good political management, be known to us beforehand, and it should then be our object to camp, if possible, within striking distance, so as to fight unencumbered with baggage.

The advanced guard, preceded by its trained scouts in skirmishing order, halts when it discloses the enemy in position and comes under heavy fire. Dispositions for the attack are then made.

Dispositions for the attack.—As a rule, the only way up to the enemy's position is by a series of converging spurs, along the crests of which the attack must advance in long columns. No one can go up the ravines owing to steepness, and to stones being rolled or thrown down by the tribesmen.

The columns on the spurs support each other by their fire as opportunity offers, the advance up one spur often making the sangars on another untenable. The advance must be slow, the troops moving on

as broad a front as the ground permits, making frequent halts on defensible knolls or ridges, and spreading out wherever possible. Officers should be careful not to outstrip or hurry their men, who, they must always remember, are carrying much more weight than themselves.

As the enemy is generally thoroughly well covered, it is not to be expected that the fire of the attacking lines can produce very much effect on him. The duty of keeping down the fire of the position devolves principally on the artillery, and also on long-range volleys from the infantry of the reserves, or specially detailed bodies. Mountain country usually offers suitable positions for this long-range firing. Against well-armed tribesmen the value of artillery fire is very great, indeed, as, now-a-days, it is only with this arm that we can engage them at a distance at which they are more or less powerless to reply. Formerly the superiority of range of our rifles forced the enemy to come within medium and short ranges and to expose himself, in order to inflict loss on us, while now casualties in our ranks are to be expected at the extreme range of modern weapons. The only way to prevent heavy losses in the firing line now is by sweeping the whole crest of the enemy's position with a heavy fire of guns and long-range volleys to divert his attention from the attacking lines; the principal object of the latter is a steady advance, and the final assault of the position. On steep ground the guns can continue to throw their shells on to the position until the foremost troops are within 100 yards or even less of the actual crest.

Flank attacks.—But notwithstanding the most careful dispositions, a purely frontal attack, against well-armed hill tribesmen, would generally be very costly. A wide flank attack or enveloping movement is essential. Any savage enemy is always nervous about his flank and rear; and, moreover, a flank attack may sometimes be able to bring fire to bear on him as he retreats from the position, a consummation rarely to be hoped for from a purely frontal assault. Sometimes, as at Landakai in the Malakand Campaign, the frontal attack may be the main one.

Formations.—No rule can be laid down as to the actual formations in which the attacking lines, or rather columns, should advance. It will depend a good deal upon the armament of the enemy. Against tribes armed only with jezails or matchlocks, and with a few rifles only, close formations are possible, and these have the advantage of a heavy development of fire, and are also strong to resist a charge of swordsmen.

But against tribes like the Afridis and Orakzais, who trust almost entirely to fire tactics, open formations are indispensable, at any rate in the early stages of the fight.

It is a great mistake to offer too many formed bodies as a target to the enemy's fire. Volleys, from the firing line against the insufficient target offered by an enemy scattered singly or in groups along a crest line of craggy heights, are generally only a waste of ammunition. What is required is controlled individual fire, particularly that of the trained scouts and picked shots. The best formation for the

attack, against well-armed hill tribes, will generally be a firing line, extended at about 2 or 3 paces, according to the ground, severity of fire, etc., covered by the trained scouts, well ahead (some 200 to 300 yards as a rough guide), moving in pairs, at intervals of 8 or 10 yards or more, and taking cover.

In this way we pit against the hillman, men as active and as enterprising, equally good shots, and almost as lightly clad as himself, while his attention is at the same time diverted and his aim disturbed by the heavy fire of the artillery and long-range volleys of the reserves.

The Gurkha scouts in the Tirah Campaign engaged the enemy much in the above method, and the practicability of the system, and the efficacy of the results, were proved by the almost total absence of casualties among the Gurkhas, while numbers of the enemy were accounted for.

Troops should always avoid massing on open spots or paths or places where casualties have occurred, as the range of such places may have been noted. An open space should be crossed by driblets of a few men at a time, at the run, an officer going first to direct.

On nearing the crest of the position the attacking troops must, however, gradually adopt closer formations and be prepared for a sudden charge of the enemy's swordsmen. This must be met by deliberate volleys and fixed bayonets. The firing line must of course be well supported throughout its entire advance, the supports moving in formation according to the ground and the severity of fire. As the position is approached, they should gradually decrease their distance until they are ready to form second line to the final assault.

2. THE DEFENCE.

In Savage Warfare a disciplined force is always on the offensive.

We cross the border to inflict punishment, not to be reduced to the false position of having to defend ourselves against tribal attack.

Apart, therefore, from the defence of a camp by night, or that of an isolated post or piquet, or party of troops overtaken by darkness, a defensive attitude is only assumed against frontier enemies, in order to induce them to attack, or stand and give us a chance of inflicting loss on them.

If a savage enemy shows the slightest inclination to attack disciplined troops in the open, he should undoubtedly be given every inducement to do so. The latter are exceedingly strong in defence owing to the intense fire that can be developed by modern weapons before the enemy can get to close quarters. The defensive is thus assumed only to make the final victory more complete and costly.

Close formations of the firing line will be necessary, with supports, under cover, if possible, close at hand, and a central reserve ready to move to any point where the enemy may succeed in charging home.

Square formations are never made use of in Indian Warfare, as the ground hardly ever allows of them. Ghazi rushes are met in line with steady volleys and the bayonet. Complete control of fire is essential,

section volleys only being employed, till the proximity of the enemy gives the opportunity for magazine and machine-gun fire.

As soon as the enemy is seen to waver, the cavalry and guns will be let loose at once in pursuit, if the ground admits, and the central reserve will move out to follow up the victory.

In the attack of a position any part of a force may temporarily assume the defensive to allow of an advance, such as a flank attack, to be prosecuted in another direction, or as a *feint* to draw the enemy out of his hills or jungle. But these are part of the tactics of the attack quite as much as of the defence.

3. RETIREMENTS.

From time immemorial it has been the experience of all war that the withdrawal of a force in face of an unbeaten enemy is a most delicate and difficult operation. Nowhere, perhaps, is this fact more strongly emphasised than in warfare on the North-West Frontier of India.

In an advance there is usually not much difficulty; the advanced guard and flanking piquets clear the line of march, and, except for a few dropping shots at intervals from long distances, often no signs of an enemy are to be seen at all.

But should the force retire, the tribesmen gather as if by magic, and, in ever-increasing numbers, envelope the rear sections of the column with a wide circle of fire, outflanking and overlapping them in all directions.

This, their activity, coupled with their knowledge of the ground, enables them to do with consummate ease, and they are thoroughly well aware of their advantages.

As a consequence, it will be found that almost all records of heavy losses on the Frontier have occurred in retirements, although, it must be acknowledged, many of these might have been saved by the proper application of the principles of a withdrawal.

The moment a party of our troops leaves a crest or ridge, or any commanding ground, it is at once occupied by the agile foe, who pours a heavy fire into our men as they make for the next ridge or cover.

One man is hit. Four others must halt, gather round, lift, and carry him off, while a fifth collects the rifles of the party. Six men are thus placed out of action by a single casualty.

The mark offered by the group from the high ground above is one that a border warrior is not likely to miss.

More casualties occur, and, within a very short space of time, the retiring party is so encumbered by its wounded that it has either to leave them to the tender mercies of the enemy, or else come to a stand and defend itself where it is exposed to the fire of hidden adversaries above, to whom it can make little or no effective reply.

The difficulties will be readily understood.

The first point to be noted is that, in Frontier Warfare, a force should never retire in face of an unbeaten enemy, unless it is absolutely impossible to stay.

A punitive expedition should not withdraw, if it can possibly be helped, from the enemy's country till submission has been made and terms complied with there.

But even thus, occasions will arise during the progress of a campaign, when a retirement cannot be avoided.

There will always be such operations as the return to camp of a column sent out to destroy fortifications in out-lying valleys, to chastise a clan or section at a distance, or an expedition to collect forage or make a reconnaissance.

A retirement should never be commenced so late in the day that there is any chance of part of the force being overtaken by darkness.

As a principle, it may be laid down that, if a force has to carry out an operation involving a retirement in the hills of anything over a very few miles, it should not attempt to retire the same day, but should camp the night, and start at daybreak. If its way lies through a difficult defile, supporting troops from camp should, if possible, be sent out to piquet the heights for it, and to meet and help in it. Only very short marches should be attempted.

The earlier the rear guard can be got in the better, for, the longer the troops are out, the more the casualties mount up, and the slower the retirement must become.

Should any portion of the troops at dusk find themselves still some distance from camp, they should not attempt to continue the retirement by night in unknown hilly country, but, just before dark, they should make for the most convenient high ground, or group of towers or villages, and there they should halt for the night, prepared to repel all attacks till daybreak. This is much safer than persisting in the attempt to reach camp.

It is most important, in these cases, for parties to keep together. Touch is sometimes difficult enough to maintain even by day, while by night, if small parties get separated, and lose their way, and wander into ravines, they offer themselves as sheep to the slaughter.

Formations.—To consider now the actual formations in which a retirement should be made, in order to carry out the operation with a minimum of loss.

All the baggage should first be sent well away with an advanced guard, which will also post flanking piquets on either side of the road for the protection of the transport, and as an additional assistance to the retiring column.

As soon as the last of the baggage is clear of camp and on the road, the force will commence to withdraw, the officer to command the rear guard and the troops for this having previously been told off.

It must be thoroughly understood that the rear guard is no detached body, dropped at a distance to cover the column. The force must never lose touch of its rear guard. Circumstances may, at any moment, arise, necessitating the halting of the whole column and the sending back of the reinforcements to cover the withdrawal of the

rear guard, or, in some cases, to completely relieve it by taking up a position across the road and allowing it to pass through.

The main principle to be observed by all bodies of retiring troops is that of gradual withdrawal by successive lines passing through each other, fresh troops being thus constantly presented to the enemy.

A retirement in the hills will nearly always commence by the withdrawal of a number of out-lying piquets, which have been posted on commanding points for the security of the force while halted.

The method of retiring these follows the above principle. On a signal from the rear guard commander, the most distant piquet (*i.e.*, that nearest to the enemy) is withdrawn first, covered by the fire of the piquets on its right and left, and also by the guns of the rear guard from below. Should any piquet be seen to be heavily attacked, or in difficulties, troops must be sent up from the rear guard to support and bring it in.

No party should ever commence its retirement until it sees that a supporting party is in a position to cover it by fire, and to allow it to pass through.

It will be the object of the officer in command to see that, as far as possible, no party has to cover the extreme rear twice.

If there should be no supporting body handy, a party will, of course, have to send back a portion of its own men to support and cover it, and these portions will then retire alternately through each other. But this should be avoided if possible. No troops can continue this harassing and dispiriting duty for very long; and once a rearmost section has passed through its supporting lines, it should, as a general principle, be allowed to re-form under its officers on the road, and continue its retirement in the line of march.

It will thus be seen that, if the enemy is pressing hard, the rear guard commander must be constantly on the look-out for good positions across which to extend strong supporting lines to enable troops last engaged to pass through.

In a retirement down from a ridge it will often be possible to move down by parallel spurs which support each other by their fire as noticed for the attack.

Troops should also keep, as much as possible, to spurs and ridges, avoiding carefully all ravines or re-entrants that are uncrowned by our own men. The golden rule in all hill warfare is never to be commanded if it can possibly be avoided.

Open ground, or places where casualties have already occurred, should be crossed in driblets, at a run, in open formation as noticed under "Attack."

Troops, in actual contact with the enemy, should retire in the following manner:—The officer in command, having seen that a covering party is ready, will decide on his line of retreat and send down a few men, preceded by ground scouts, to point out the best line of retreat. More will then be sent away at the double, the remainder extending to keep up the impression of full occupation. Finally, a few trained

scouts alone will remain, taking cover and keeping up a rapid fire till their comrades are in safety behind the supporting troops, or in a new position.

The trained scouts will then turn about together and clear the intervening space at full speed, the supporting party at once opening fire on the abandoned crest or position.

Against tribes like the Afridis, as long as any rifles at all are to be discerned on a position, the enemy will maintain a respectful distance.

Counter-attacks.—As it is most important to get a retirement over as soon as possible, counter-attacks on a large scale should only be resorted to, when, owing to the accumulation of wounded, or the determined attitude of the enemy, it becomes imperative to drive him back. In this way a party, taking up a position for the night, may have to clear the enemy from their immediate vicinity before settling down.

Artillery.—No mention has as yet been made of the part played by the guns in a retirement, but, from what has been said as to the necessity of supporting fire from other troops in rear, it will easily be understood that the guns are almost the mainstay of the whole operation, and save innumerable casualties.

By their shells thrown from long ranges, over the heads of the infantry, on to the most commanding and dangerous heights, the enemy is held in check, and prevented from approaching too near, in a manner, the value of which it is impossible to over-estimate.

The guns will usually be kept concentrated in a central position, on or quite near the line of march.

The commanding heights on both sides of the road are nearly always visible from thence and within range, and the guns are also ready to move back to a second position when required.

They must never be left out too late, or be allowed to remain too near the enemy. There should always be at least the rear battalion covering them, and, in addition to this, there should also be a special escort of at least one company.

Unlike civilised warfare, it is no honour for the guns to risk capture by the enemy; the moral effect of a single gun falling into the tribesmen's hands would be enormous.

In an attack the guns can and do advance boldly to well within medium ranges, leaving the road, if necessary, to get good artillery positions; but in a retirement they must, as explained, be kept handy to the road, and fire as best they can from there.

Cavalry.—Except in absolutely precipitous country, there will always be, as in European warfare, a great deal of scope in a rear guard action for cavalry work, especially a combination of mounted and dismounted action.

Where the ground allows mounted work at all, a mere handful of cavalry can accomplish wonders in keeping the hill men from venturing out of the hills. In bad ground cavalry must, perforce, dismount

and defend themselves with their carbines, but their horses will enable them to get away and put them on more equal terms with the enemy in this respect.

Perhaps the greatest advantage of having cavalry in the rear guard is that they can take the offensive rapidly and make counter-attacks, where infantry, as already noticed, would delay the whole movement too greatly.

Trained scouts.—It will be understood from the remarks on the actual formations for the retirement of the rearmost bodies that, just as in the attack, the men in closest contact with the enemy will be the *trained scouts* of the rear companies, thus fulfilling their rôle of men selected for their nerve, coolness, activity, and shooting. Whether under the circumstances it will be thought necessary to have the scouts massed, or a separate tactical unit, such as a hill battalion, to cover a retirement in lieu of cavalry may therefore be doubted: but if it should be thought desirable, there is nothing in the formations suggested to interfere with it.

The chief reason against any independent body of troops covering a retirement is, of course, that alluded to on page 347, *viz.*, that no one body should ever be compelled to cover the extreme rear too long.

Firing.—As the enemy hardly ever offers a target worthy of the name, volley firing in a retirement, even more than in an advance, is generally a mere waste of ammunition. Controlled individual firing should be employed, volleys being reserved for the case of a gathering of the enemy, or a Ghazi charge.

Casualties.—Doolies are much too heavy and slow for the removal of the wounded in these hill retirements. Moreover, the coolies are not to be trusted so close to the enemy. They should never leave the road. There should be plenty of *light stretchers*, at least four per company, capable of being carried by two fighting men.

Casualties are the real difficulty. Directly a man is hit, he must be at once picked up by the two nearest fighting men and carried right away, two more men accompanying to carry rifles and take turns at carrying the wounded men. No stopping for bandaging or first aid should be thought of, at any rate, till well behind supporting troops or on the road.

PART V.—SECURITY.

I. GENERAL REMARKS.

In no respects do the principles of European warfare demand more complete modification than in regard to the measures required for the protection of a force when halted in the enemy's country in a Frontier campaign in India.

The conditions of the enemy and his mode of warfare are so entirely different to those of regular troops that hardly any portion of Infantry Drill on this subject applies at all,

A frontier enemy is tied to no particular line of advance, and it is, therefore, obviously useless to tell off a certain portion of the force to be spread out towards him in a fan-like form in order to secure the repose of the remainder.

Security must be ensured from all directions.

This is the first principle in frontier and, indeed, in all savage warfare.

Detached bodies will not, as in civilised war, attain the desired end. In broken ground, or under cover of darkness, a savage enemy can always slip in between piquets and supports and fall on the camp.

The troops in the latter must, therefore, in any case be always ready to repel an attack at a moment's notice whether there are outlying piquets or not.

The second principle then of security in frontier warfare is that chief reliance must be placed on the troops holding the perimeter of the camp itself.

Outlying piquets are certainly used, and with the best possible results, when the enemy is one who, armed with breech-loading rifles, confines his operations to firing into camp from a distance, and is chary of charging home in force. But in all cases the perimeter of the camp is the main source of security.

2. THE DEFENSIVE PERIMETER.

The perimeter, therefore, in any camp or bivouac must always be made capable of defence, and should also afford a certain amount of security against fire. It will usually on the frontier take the form of a rough stone wall, with a ditch or trench, but it may, of course, be constructed of earth, logs, commissariat stores and boxes, or a combination of some of these. In a standing camp, or wherever possible, obstacles outside add greatly to the value of the defences.

Within this fortified enclosure all the baggage animals, the hospitals, staff, cavalry horses, and all defenceless units are collected in as compact a shape as possible according to the ground; and the fighting portion of the force is encamped or bivouacked on the perimeter. As soon as the troops arrive in camp, each unit has its portion of perimeter allotted to it, and it proceeds at once to erect its own defences.

If there are tents, they should be pitched with their ridge poles parallel to the perimeter, in which position they form an additional obstacle to a sudden rush. When, however, an attack in force on a camp is expected, all tents should be struck immediately on the first alarm.

There should be a clear space of at least 10 yards in rear of the defensive perimeter to allow troops to form up, reinforce, and communicate with each other.

Machine guns, if present, should be placed so as to command the most probable lines of attack, nullahs, or points where the field of fire is restricted. Also, where possible, to flank a probable line of advance.

As regards the desirability or otherwise of placing guns on the perimeter at night, various opinions have been expressed.

The chief use of the guns at night is to fire star shell; they are not required to engage the enemy. If placed on the perimeter in a large camp, they could only illuminate their own front, while the attack might come from any direction. If split up and distributed, loss of star power results, and the practice is also open to other objections.

There is no doubt that a battery on the perimeter, occupying even its minimum camping space, offers a weak point to a rush; and although, in the Malakand Campaign, infantry were placed between the guns to minimise this danger, still, on the whole, it may perhaps be acknowledged, as a general principle, that the best place for the batteries is somewhere near the centre of camp, close to the main road, whence they could be moved, if necessary, to any position from which they might be required to fire star shell.

In the Tirah Expeditionary Force neither guns nor cavalry were ever allowed to be placed on the perimeter of camps.

In-lying piquets.—The troops on the perimeter are disposed, in their bivouacs or tents, immediately in rear of the defensive parapet or wall, but a certain proportion must always sleep fully accoutred and ready to turn out at a moment's notice to line the defences till the remainder can get under arms.

In this manner each company of a battalion should have one section told off as in-lying piquet, and one company per battalion should ordinarily be detailed as battalion reserve. Company officers camp immediately in rear of their companies.

Sentries, doubled at night, are posted on the perimeter itself at intervals of about 30 or 40 yards—one or two from each company. They do not patrol and are concealed, as much as possible, by big stones placed on the wall.

Action if attacked.—Desultory firing by the enemy, either by night or day, should, as a rule, be disregarded. It is often done merely to locate the position of sentries, etc.

On the alarm being given by the sentries, the in-lying piquets fall in, but the rest of the troops are not disturbed unless it is seen that an attack in force is threatened.

There must be no firing without orders, except by sentries if attacked, or to give the alarm.

Should the enemy succeed in penetrating the perimeter at any point, then the bayonet is the only permissible weapon. It should be understood that "alarm posts," in Frontier Warfare, always mean the perimeter itself.

In a new camp there should be a parade at dusk, of all the troops, on the perimeter as for an alarm to see that all know their places, and that no portion of the perimeter is left unprotected. It is not necessary to strike tents for this. If there are out-lying piquets, their positions should be pointed out at this parade. Short explanations should also be given regarding firing, the duties of the in-lying piquets, etc., etc.

No trumpets or bugles should be sounded.

Troops in Frontier Warfare should never pile arms under any circumstances. Every man should always sleep with his rifle beside him.

This applies to men falling out, working parties for road-making, etc., as well as to piquets and troops in camp.

When a night-attack may be expected, it is a great assistance to the defence to have bonfires, about 100 to 150 yards, outside the perimeter. This was strikingly exemplified in the night-attacks on the Malakand Camp in 1897.

3. OUT-LYING PIQUETS.

As a camp in Frontier Warfare will generally lie low near water, it will almost always be commanded by heights within rifle range all round.

From such points of vantage individuals or small parties of the enemy, armed with breech-loading rifles, can occasion much damage and more annoyance by firing into camp—especially at night.

This night-firing, or as it has come to be termed "sniping," is one of the most annoying features of Frontier Warfare, and all possible measures should be taken to put it down, such as burning the villages of sections known to be in fault, sparing those who abstain from it, etc., etc.

But against well-armed tribes, the effects of sniping are so severe that it is absolutely imperative to deny the commanding ground to the enemy and occupy it ourselves.

Just as the march of a force is protected from fire by crowning the heights on either side of the road, so the camp is protected by crowning the heights around it.

No hard and fast rule can be laid down as to when out-lying piquets are required, or when the perimeter alone is sufficient. It depends entirely on the severity of the night-firing. The piquets are put out solely with the object of minimising the latter; they are not intended to check an attack on the camp.

There are still many tribes on the frontier, such as the Mamunds, against whom it would be not only unnecessary, but dangerous, to leave out weak piquets unsupported all night, as these tribes, having fewer rifles and more cohesion than the Afridis, combine to make night-attacks in great numbers.

But the very fact of the absence of rifles renders the piquets unnecessary. The only defence against a rush is the perimeter.

But against all tribes, who are well armed and adopt guerilla tactics, a very extended system of small piquets, both by night and day, saves many lives and much worry and annoyance to the force in camp.

The piquets have, on occasions, been severely attacked, the enemy advancing with the greatest boldness up to the very sangars and bayonets of the defenders; but, once it is thoroughly understood by the

piquet that retirement on the camp, or reinforcement from it, are both equally impossible till daylight, and if the piquet be well posted on commanding ground, and covered by a stone wall or sangar, the power of our weapons in disciplined hands is such that a very numerous enemy can be successfully beaten off, often with heavy loss to himself and little or none to the piquet. The tribesmen soon learn to understand this, and serious attacks become less frequent.

There is no doubt, therefore, that, in future campaigns in the hills, out-lying piquets will be employed and trusted to much more than in the past.

The presence of the piquet cannot be expected to stop all firing into camp by night. A savage enemy can always creep through any number of piquets, but by day the camp is rendered perfectly secure, and even at night the piquets will naturally occupy much of his attention. Moreover, if individuals do creep through, their fire from the comparatively low ground is much less effective.

The method of posting the out-lying piquets must now be considered.

It will be found to differ materially from that of civilised warfare.

No single unit of the force could be expected to post piquets to a distance of a mile or more all round a large camp. Each unit, therefore, on the perimeter finds the piquets for its own front.

By this method also supplies of food to piquets and their relief or recall to camp are much simplified.

The arrival of a column in camp is protected by temporary piquets thrown out by the advanced guard as explained under "Marches."

It is then settled what heights will have to be piqueted, and the limits of front for each unit are told off. It is left to officers commanding regiments to arrange the strength and exact positions of the piquets in their own area, subject to any special instructions of the General Commanding. The piquets of the advanced guard, who have probably been under arms before daylight, are then relieved by fresh men from camp, who have had a rest and a meal, and who take out with them food and blankets and warm coats, prepared to spend the night in the open.

In addition to the hills, any villages or towers, which, from their proximity to camp, might harbour the enemy, are also occupied, or else burnt, by our troops.

Instructions for piquets.—A piquet must always be sent out by daylight and, moreover, in such time as not only to run no risk of being overtaken by night, but so that there may be ample time in which to reconnoitre all the ground in the vicinity of its post, construct its sangar, and clear, if necessary, a field of fire.

It should move to its post, covered by scouts, in skirmishing order, exercising the greatest caution not to be ambuscaded, and taking all the military precautions required in Frontier Warfare, *vis.*, not to be commanded, not to offer collected bodies as a target, etc.

On arrival at its destination the officer or non-commissioned officer commanding should carefully note the surrounding country, the most

likely lines of attack, or positions from which he may be fired upon. He should also note the best line for his retreat next day and the positions of neighbouring piquets.

A sangar will be commenced at once, a good open position, with the ground sloping away on all sides being the best if obtainable. All small jungle should be cleared to a distance of at least 40 or 50 yards.

Along the top of the sangar, large stones, larger than a man's head, should always be distributed at irregular intervals.

These, from a distance, are likely to be mistaken for men's heads.

Sentries should be inside the sangar, stationary, and well concealed and covered. Bayonets to be fixed.

None of the piquet should take off their accoutrements.

No piling of arms is allowed; every man sleeps with his rifle close beside him.

There should be a parade of the piquet ready for its defence just about dusk.

The Officer Commanding will briefly explain the situation to his men, pointing out the positions of neighbouring piquets and of the camp, and explaining that no reinforcing or retiring can be expected by night; and that no one can leave the sangar after dark. The men should then be dismissed.

Piquets firing and action if attacked.—As in camp, so in the piquet, the replying to distant shots must be discouraged.

Should, however, the position of a sharp-shooter be fairly well located at short range, one or two volleys will not be wasted in dislodging him.

In case of a serious attack, the fire must be by word of command only and by volleys until the enemy are actually close up. Fire discipline is most important to prevent waste of ammunition. The running short of this is perhaps the only real and imminent danger.

Number and strength of piquets.—No rules can be laid down for these important points. It depends on the ground, tactics, and enterprise of the enemy.

Only the most commanding points need be occupied, and those most dangerous to the camp.

Where the ground is much broken, more piquets will naturally be necessary.

The strength of piquets depends to some extent on their distance from camp; for, although they are safe enough when once posted, they have to make their way out, and to retire next day; and they may be attacked *en route*.

In Tirah very small piquets always held their own; piquets of over forty rifles were seldom necessary, and most of them, when well posted and flanked by the fire of others, were often much less—from fifteen to twenty rifles. Village and tower piquets can be even less again if close to camp. There should always be an officer or native officer in command of a night piquet of over twenty rifles.

On the other hand, against the Mamunds and such like tribes, if it should be necessary to leave out piquets at all by night, nothing less than one hundred to two hundred rifles could be considered safe.

Every piquet should always have with it signallers and signalling apparatus, both for day and night communication.

There should also be, with each piquet, two or three light stretchers.

The withdrawal of the piquets on leaving camp is considered in Part 3, Retirements.

4. STALKING PARTIES.

There is yet one more measure that may be taken to disturb snipers into camp, and that is by lying in wait for them with parties of trained scouts. It is usually done when firing is observed to come regularly from a certain nullah or locality. The perimeter and piquets having been carefully warned not to fire, the party goes out just before dusk, and conceals itself somewhere near the enemy's line of approach.

There is nothing, perhaps, that has a better effect in putting an end to night firing than these ambushes for the firers. Goorkha or native scouts are naturally the best men to employ.

PART VI.—MISCELLANEOUS.

1. JUNGLE FIGHTING.

In regard to marches, jungle warfare is not unlike hill warfare, in that the road is generally a mere track; pack animals only can, as a rule, be used, and the force is accordingly encumbered by a long and vulnerable baggage train. Just as in mountain warfare, therefore, the march is practically the conduct of a "convoy."

But, as combined attacks by large numbers are difficult in the jungle, either by our side or by the enemy, it is usually more feasible in jungle warfare to break up the forces employed into small lightly-equipped columns, and so reduce, as much as possible, the baggage. Only small bodies can effect useful results in the jungle. As it is impossible to use flank guards or piquets, the only way of protecting the baggage is by strong advanced and rear guards and by distributing formed bodies along it at intervals on the road, and smaller parties, 5 or 6 men together, under a non-commissioned officer between these again.

Contact with the enemy.—The jungle lends itself so greatly to ambushes that the advanced guard must be constantly on the look-out for these. The best way of guarding against them is to have a certain number of natives of the country to scout and guide the column. If trustworthy, they will find out the enemy better than the troops can, and if untrustworthy, they will take care to avoid coming under fire or running any risks. From their demeanour, therefore, much may be gathered.

Well ahead of the advanced guard, about 50 to 100 yards, there should always be a "point" of a few selected trained scouts under an officer, and with these should always be one or more of the native guides above referred to.

When the near presence of the enemy may be expected, it is necessary to have, in addition to the "point," small parties of flankers, making their way through the jungle on either side of, and a little in advance of, the "point." This is a very certain, though necessarily laborious, method of guarding against surprise.

When the enemy is found, the endeavour must be to work round to his flank, or both flanks, with the bayonet. It is specially necessary to be on the watch for ambushes on *both* sides, of the road, and not to allow oneself to be drawn into, or past, other ambushes while following up one party of the enemy.

If the enemy is found to be posted in a stockade or fortified village, the best plan is to work right round towards his line of retreat before making a frontal assault. This saves life in the latter, as the enemy will not stay so long if he has reason to fear for his line of retreat. The moral and physical effect of mountain guns close up to the stockade is very great, but if used too soon, the enemy evacuates his position before the infantry can inflict any loss on him.

Mounted infantry finds a congenial sphere in jungle warfare, where rapidity of movement is all important. The enemy trusts to his superior mobility and to guerilla tactics, and, after inflicting a certain amount of loss on our leading troops, retires before reprisals can be made. By the use of mounted infantry or cavalry, punishment can, in these cases, often be inflicted, where infantry alone would fail to come up with the enemy.

As regards security, it is only necessary to note that to be defensible a camp or bivouac must have a certain amount of clear space round it. No out-lying piquets are safe or required. A laager or zariba is made round the camp, and the fighting portion of the force occupies it.

2. NIGHT OPERATIONS.

It is very difficult to lay down anything definite about these for Indian Frontier Warfare. In most of the countries the nature of the ground is such that night operations of any kind on our part are impracticable.

As far as attacks are concerned, there is perhaps no reason why we should make them at night in the broken or jungle covered countries such as we are considering. It would merely be throwing away our advantages of armament and discipline.

Night marches, however, to endeavour to effect a surprise and attack at dawn have been made at times with the very best results. They should be practised in peace in places where the ground is not too precipitous. The habit of falling in quietly, and moving by night without confusion, is a most useful one. The chief night operation in frontier warfare is that of repelling an attack on a camp or piquet

or post. For this all preparations should always be made before dark, and they have already been fully considered under "Security." Every man should know his place and the way to it. Bonfires should be prepared well outside the perimeter and lighted at the first alarm. Tents must be struck. All followers should remain where they are; transport drivers with their mules.

PART VII.—TRAINING OF TROOPS.

We come now to the very important question of training in peace for hill and jungle warfare.

At the commencement of every frontier campaign, there are always certain regiments who get into difficulties and suffer losses, simply from want of knowledge of tribal tactics and want of previous experience in working in the hills. Moreover, this want of knowledge on the part of one regiment sometimes leads to losses in another which may have been relying on it to cover its flank, or to keep certain vitally important piquets in position to protect it from distant fire.

Something of the knowledge required—the kind of country and the enemy, the dangers to be guarded against, and the best means of meeting and overcoming them—it has been the object of the foregoing pages to show, but mere abstract study is not enough. Actual practice and training, under conditions approaching as nearly as possible to those of active service, must go hand-in-hand with study. Practice is the only way in which all ranks, officers and men alike, can gain an intelligent insight into the sort of work expected of them on the frontier.

Success against a hill enemy depends very greatly on the junior officer and the non-commissioned officer. Companies, and even smaller units, are constantly being separated and thrown on their own resources, and it is, moreover, of the small bodies that the tribesmen endeavour to take advantage. A faulty position chosen for a piquet, a badly placed sangar, or the clumsy handling of a small body of troops in retirement, may result in unnecessary and heavy waste of life. Combination and mutual support, and harmony of working in all units, from the greatest to the smallest, are indispensable, and all these things can only be obtained by constant practice and careful training under competent criticism.

Peace training divides itself naturally into three parts :—

- 1.—The training of the company.
- 2.—The battalion.
- 3.—Mixed forces of the 3 arms.

1. *The company.*

In company training the foundation is laid for the higher necessities of (2) and (3).

The syllabus issued by head-quarters for training for hill warfare includes and covers all the various kinds of exercises that need to be

practised, and it is unnecessary to transcribe them here. They are tentative only at present, but it will probably be found that there is little or nothing to add to them.

They should form part of the annual field training laid down in Infantry Drill, Part X, Section 218.

If there is any point that calls for notice in regard to company training, it is, perhaps, that, if the suggestions made below for the battalion were adopted, the term of company training in cantonments might be somewhat simplified and shortened for troops in India ; or, at any rate, for those stationed in the hills. This would be a distinct advantage, for, as the regulations stand at present, training for hill warfare comes as a pure addition to all the training at present in force.

The syllabus covers a lot of ground, and particular stress is laid on the company training, but it may perhaps be remarked that many of the exercises now laboriously practised and perfected, as *separate* exercises, in barracks or cantonments, in the company training, would be learnt in half the time, and in a far more practical and instructive, and withal, more interesting manner, in camp, in the battalion manœuvres suggested.

The chief objects of the company training should be to give the men an *elementary* knowledge of the nature of hill warfare ; to ground them in the first principles of the different military operations ; to train their wind and muscle, and accustom them gradually, and by easy stages to work over the hills. Hill climbing should be commenced with khud sticks, and work to the full war service equipment and weight. Finally, a most important part of the company work is to select the *company scouts*.

It must be remembered that company-training goes on all through battalion and brigade manœuvres. It is in these alone that the different operations are learnt in their right places and times, and with reference to the actual needs of the situation, and movements of collateral units. It is, perhaps, hardly necessary to instance such exercises as pitching and striking tents, packing and loading mules, building sangars, digging trenches, making latrines, field cooking, etc., etc. These are simply the ordinary daily routine of field service, and the teaching of these in peace, as special exercises or in any other way than by camping and marching under field service conditions, is an unnecessary expenditure of time and energy.

2. The battalion.

To come then to the battalion. The contention is that, if we are to make our training *practical*, to train for *war* and not for the performance of certain " exercises," more can be learnt by the troops in one week of camping, and knocking about in the hills, than in months of training on the barrack square, or in short exercises of a few hours each in the neighbourhood of the station.

In a word, more manœuvres are required, and these should begin with the battalion, and not, as at present, be reserved only for larger concentrations of mixed forces.

On the conclusion of the company training, the battalion should be sent out into camp in the hills for a week or ten days at a time; twice during the year, in suitable seasons, would be ample. Even *once* would be of incalculable benefit.

The arranging of the actual work for each day would be left entirely to commanding officers, but the following suggestions for a week's work will perhaps serve to illustrate still more clearly (should illustration indeed be necessary) the practical utility of the measure.

The battalion starts out under a simple general idea, such as to work up a certain valley, punish and burn certain villages at a certain distance, and retire; the armament of the enemy supposed being explained. Every one has thus a clear idea of the object with which the battalion is working.

Following the natural sequence of events, the exercises practised would be—

1st Day.—Packing and loading mules. Baggage guards. March of a few miles only, with advanced and rear guards. Pitching tents. Building defensive perimeter. Telling off in-lying piquets, sentries, etc. Make cooking places, latrines, etc. Parade on alarm posts.

2nd Day.—A longer march with advanced, rear, and baggage guards and *flanking piquets*. Some trained scouts out, as the enemy, to fire on the column. On arrival in camp, post out-lying piquets for the night, scouts to create a night alarm by firing into camp, if the ground permits of movements after dark; other scouts to go out as stalking parties to endeavour to intercept the snipers.

3rd Day.—Leaving the baggage in camp; practise the attack of heights combined with a flank attack.

4th Day.—An expedition to forage and burn villages, or to make a reconnaissance. Retirement to camp, followed up by trained scouts as the enemy.

5th Day.—Withdrawal from camp towards home followed up. Practise withdrawing out-lying piquets. Make a short march only, in order to avoid camping in the same place as going out.

6th Day.—March home with flanking piquets, and all precautions.

The above are of course mere suggestions. Endless variations will suggest themselves. It should be arranged that all companies take their share, in turn, of all duties such as advanced and rear guards, flanking piquets, night piquets, etc.

Casualties should invariably be practised in all operations, especially in retirements; also signalling and working by signals.

No bugles or trumpets should be used.

During the second outing the general idea and exercises should be varied, and, in order to prepare for brigade manœuvres, the battalion should be practised as part of a brigade, with supposed guns and cavalry. The combination of the three arms should be explained.

3. *Manœuvres of a small mixed force.*

Concentrations of several battalions, and guns, where possible, have already been officially recommended and arranged for. There is little left to say about them. Brigade manœuvres are to the battalion what

the battalion manœuvres are to the company. The interest and value is heightened by having other units, and the trained scouts of other regiments, to pit, one against the other, as the enemy.

The more combined camps-of-exercise we can have then, the better. In these the higher officers and the staff receive their instruction and practise, and mutual support and combination are learnt by all concerned. No point comes out more strongly in Frontier Warfare than the necessity of the different arms understanding each other's working, and how to mutually assist each other.

And now the question of the difficulties and objections that lie in the way of realising battalion manœuvres, as a practical working scheme, must be considered.

For the outings suggested, pack transport will be required, and tents and doolies and field rations, and many other accessories of field service. The reader has doubtless already been wondering whence these things are to be provided, and how the expense is to be met.

The only reply possible is that times change, and training for war must keep pace with the altered conditions.

It is not so long ago that manœuvres of any kind were unknown in our service, yet, in spite of difficulties and expense, each year now sees more instructive and more practical concentrations, both at home and in India.

Late experience has shown that Frontier Warfare must be practised in the sort of countries in which it actually takes place and under, as nearly as possible, the actual conditions, and it is cheaper in the long run to put our troops into the field with transport and accessories which they understand and have had the opportunity of thoroughly handling in time of peace.

Nor would the expense be by any means so great as would at first sight appear. Only certain stations are so situated (either in the hills, or within easy reach of them) that hill manœuvres can be carried out from them at all.

Again, all British battalions stationed in the hills go into camp on their way up and down to their cold weather stations; and it would be at these times that camp equipage and other arrangements would be taken advantage of to include the weeks of hill manœuvres. The only real difficulty is the pack transport, and even in this respect a certain amount can be made available at many stations.

Whether the labours of recent Committees on Transport will result in an addition to the peace establishment of pack animals, and thus still further minimise this difficulty, cannot yet be said; but even if an increase is not sanctioned, there is still sufficient maintained in one station or another, with which to train sufficient regiments to form the first troops to be placed in actual contact with a hill enemy.

A certain amount of expense would be involved only in the transfer or marching of transport from dépôt stations to points of manœuvres.

As a last resource, it would even be worth while to divert, at least every alternate year, a substantial portion of the annual grants for camps-of-exercise to battalion manœuvres.

With battalions who understand hill warfare, and a frontier enemy, the manœuvring of brigades, or larger forces, is a matter of little difficulty.

Personal Memoirs of U. S. Grant.

I am also indebted to the courtesy of the American War Office for some six and twenty official maps and plans which they gave me three years ago.—F. M. R.

camps-of-exercise to battalion manœuvres.

With battalions who understand hill warfare, and a frontier enemy, the manœuvring of brigades, or larger forces, is a matter of little difficulty.

* THE STORY OF THE AMERICAN WAR OF 1861 TO 1865.

BY

LIEUTENANT-COLONEL F. M. RUNDALI, D.S.O.,
COMMANDING 1ST BATTALION, 4TH GURKHA RIFLES.

Friday the 18th and Friday 25th August, 1899.

*The Honourable Major-General Sir E. Collen, K.C.I.E., C.B.,
in the Chair.*

Before the lecture began, Sir Edwin Collen said :—

“ Last year Colonel Rundall gave us an excellent lecture on the exploits of a leader of guerilla cavalry in the American War, and I then ventured to suggest that it would be of very great advantage if he would devote himself to the preparation of an outline of the war. He was so good as to comply with my request, and he will now present to you the results of his labours.”

To condense into two short lectures so vast a subject as the great Civil War of America is a work of no small difficulty. I would beg you to bear in mind that

Prefatory remarks.

* The following is a list of the authorities I have consulted :—

The Outbreak of Rebellion. By J. G. NICOLAY.

From Fort Henry to Corinth. By Major-General the Honourable M. F. FORCE.

The Peninsula. By Major-General A. S. WEBB.

The Army under Pope. By J. C. ROPES, Esq.

The Antietam and Fredericksburg. By Brigadier-General F. W. PALFREY.

Chancellorsville and Gettysburg. By Major-General ABNER DOUBLEDAY.

The Army of the Cumberland. By Brigadier-General H. M. CIST.

The Mississippi. By Lieutenant F. V. GREENE, U. S. A. Engineers.

Atlanta. By Major-General the Honourable J. D. COX.

The March to the Sea. By Major-General J. D. COX.

The Shenandoah Valley in 1864. By G. E. POND, Esq.

The Virginian Campaign of 1864 and 1865. By Major-General A. A. HUMPHREYS.

History of the Campaign of General Stonewall Jackson. By WILLIAM ALLAN, Esq.

Mosby's Rangers. By RALPH B. KENYON.

Statistical Record of the Armies of the United States. By Captain F. PHISTERER.

History of the American War. By Lieutenant-Colonel FLETCHER, Scotts Fusilier Guards.

Personal Memoirs of U. S. Grant.

I am also indebted to the courtesy of the American War Office for some six and twenty official maps and plans which they gave me three years ago.—F. M. R.

the war lasted for over four years; that the fighting was spread over an immense tract of country; that it included more than 2,200 battles and skirmishes, involving casualties on the Federal side alone to the extent of about 304,369 killed or died of wounds, etc.,* in addition to an enormous number of wounded; and, if I appear to touch, either too briefly, or not all, on subjects of the deepest military interest, it is because my object is merely to give you an outline of the war as a whole, and time will not admit of more than an outline sketch of this mighty conflict.

We have all heard of the Battles of Bull Run or Manassas, of Shiloh, Corinth, Atlanta; we are familiar with the names of Lee, Grant, Stonewall Jackson, Sherman, Sheridan, Stuart, etc. What I want to do is to connect these famous names of men and places, to give you a short and clear account of this interesting story, so that they may be no longer merely isolated and disconnected names of men and battles.

First, then, what was the cause of the war?† For some years previous to its outbreak disaffection to the Union had been steadily gaining ground in most of the Southern States. They were the home of the wealthy cotton and tobacco planter, whose fine estates were maintained by slave labour. To slave labour the South owed, in a large measure, its wealth. The Southerner thought that the North menaced the system of slavery and aimed at its abolition; and when Abraham Lincoln, whose aversion to slavery was notorious, was elected President of the United States, disaffection culminated in open revolt against the Government. As a matter of fact, Abraham Lincoln, one of the noblest and ablest of the men whose names are inscribed on America's portentous roll of great men, had no intention of any unwarrantable interference with Southern customs. The truth is the South was conservative to a fault and could not brook the radical spirit and tendencies of the North. The Southerner, accustomed to lord it in his own great and wealthy domains, wished to be paramount in Congress also, and highly resented anything which made him feel the curb or spur; it angered him to find the Congressman from the North did not care two cents for his descent from some noble English family with a long pedigree, and sturdily stuck to his own opinions and ignored him.

As Nicolay in his book on *The Outbreak of Rebellion* puts it, "The fungus of treason grew rankest in the hot-beds of the heavy slave counties; the poison of conspiracy infected the centres of accumulated wealth, of inherited family pride, of over-fattened political ambition."

Let us now turn to the map and look at the Theatre of War.

The Alleghany Mountains, 1,000 miles long and 100 broad, extend from New York to Alabama. Thus the Theatre of War was divided into two portions—the eastern part comprising the coast of the Atlantic and the states thereon situated, and the western part the Mississippi River and its tributaries, and that huge piece of territory known as the Mississippi Valley. The Federal Capital, Washington, and the

* The Southern returns of killed and wounded are incomplete and unreliable. Casualties were often purposely greatly under-stated for fear of discouraging enlistment. The Confederate losses are estimated at not less than 443,248.—F. M. R.

† *The Outbreak of the Rebellion.* By John G. Nicolay.

Confederate Capital, Richmond, were both situated in the eastern portion of the Theatre of War. They are only some 115 miles apart, and the object of each of the contending armies in the East was to gain possession of the other's capital. In that portion of the Theatre of War the struggle surged backwards and forwards across a portion of Virginia, Maryland, and Pennsylvania, fighting often taking place on the same spot in different years.

In the western portion of the Theatre of War it was another matter. There the objective was the possession of the Mississippi River which would give the Northern Armies a great highway and line of communications; while the South, by losing it, would be cut off from the fertile resources of Arkansas, Louisiana, and Texas. My endeavour will be to present to you a brief outline of the war in both portions of this theatre.

To skip backwards and forwards from East to West would only hopelessly confuse you; so, after careful consideration, I have decided to take the two portions of the Theatre of War separately.

On October 5th, 1860, the Governor of South Carolina wrote to what were known as "The Cotton States" (North Carolina, Alabama, Mississippi, Louisiana, Georgia, and Florida) and proposed secession from the Union. The action of South Carolina and the election of Lincoln as President of the United States resulted in the secession of various States* between December 20th, 1860, and February 1st, 1861.

On February 4th, 1861, the secession delegates met at Montgomery Alabama, and a few days afterwards adopted a provisional Government which they called "The Confederate States of America," and which recognised and upheld Negro slavery, and declared its decrees to be the supreme law of the land, and binding on the judges in every State. On February 9th, 1861, this Confederate Government elected Jefferson Davis as its President.

There is no doubt that the whole purpose of the revolt of the Southern States was to establish a powerful slaveocracy.†

Abraham Lincoln did all he could to prevent blood-shed and civil war, but the Governors of the Cotton States took forcible possession of all forts, arsenals, and other warlike property and material in the South; and on April 12th, 1861, the war may be said to have commenced by the forcible seizure of Charleston Harbour by the Southerners, and their attack on the harbour defences, Forts Sumter, Pinckney, and Moultrie. The attack on Fort Sumter, the principal one of the three, was carried to a successful

* South Carolina seceded December 20th, 1860.
 Mississippi " January 9th, 1861.
 Florida " " 10th, 1861.
 Alabama " " 11th, 1861.
 Georgia " " 19th, 1861.
 Louisiana " " 26th, 1861.
 Texas " February 1st, 1861.--F. M. R

† *The Outbreak of Rebellion*, pages 41-42. By John G. Nicolay

issue without blood-shed, though, strange to say, it was heavily bombarded for 36 hours ; it was surrendered by the starving Federal garrison on April 14th. Upon this the North rose as

The call to arms. one man to resist the South. On April 15th Lincoln published a proclamation calling out the Militia of the United States to the number of 75,000, for there was no regular army worth mentioning as regards numbers. The call to arms was nobly responded to, and in less than 48 hours troops were on the march to places where conflict with the Southerners might be expected. Throughout the years that followed repeated calls for men had to be made of course, and altogether the total number of men furnished for the Federal, or Northern, Army exceeded 2,850,000 men.* Jefferson Davis in his turn called the South to arms on April 17th, and raised the Stars and Bars in opposition to the Stars and Stripes. He also offered to armed privateers of any nation letters of marque and reprisal, hoping that by this means the Federal Fleet would be kept engaged by ships belonging to European nations, who were largely dependent for their cotton supply on the Southern States of America.

Jefferson Davis' call for troops was responded to by some 40,000 men.† I may as well state at once that all through the war the Northern Armies, *as a whole*, far outnumbered those of the South.

Virginia, North Carolina, Tennessee, and Arkansas, which had up till now stood aloof, joined the Southern Confederacy. Kentucky, Missouri, and Western Virginia wavered, or tried to be neutral, but eventually threw in their lot with the North.

Maryland was at first deeply infected with the spirit of rebellion, Fighting in Maryland. and when the first Northern (Federal) troops passed through Baltimore on their way to garrison Washington on April 19th, 1861, there was a serious riot, and sharp street-fighting took place. This disaffection did not disappear till Baltimore was taken forcible possession of by the Northern (Federal) troops on May 13th, 1861.

Meanwhile, on April 18th, 1861, the Virginian (Confederate) troops Seizure of Harper's Ferry. seized that important strategical point on the Potomac River, Harper's Ferry. The North had an important armoury there containing much valuable machinery for the manufacture of small arms. At that spot, too, was one of the principal crossings over the Potomac from the Northern to the Southern States. The Town of Harper's Ferry, by the way, is famous as being the scene of the invasion and capture on October 16th, 1859, of the celebrated fanatic John Brown who, as we all know, was a soldier in the Army of the North, whose knapsack was No. 99, whose body was hung on a sour apple tree on December 2nd, 1859, and whose soul goes marching along !

Many other acts of aggression were committed by the South over which we cannot linger. Washington soon became a great military camp, and was eventually surrounded by an immense chain of strong fortifications.

* *Statistical Record of the Armies of the United States*, page 11. By Captain F. Phisterer.

† I have been unable to get statistics of the total numbers of men furnished by the South during the war.—F. M. R.

Meanwhile two most important persons resigned their commissions in the Northern Army—Colonel Edward Johnstone and Colonel Robert Lee. The latter had been actually offered the Commander-in-Chiefship of the Northern Army, but he was a Virginian, and his sympathies were with the South. He refused, resigned his commission, and became the Commander-in-Chief of the Confederate or Southern Armies. Johnstone, Lee, and Stonewall Jackson were, to my thinking, the ablest Generals in the war; Lee especially was incomparably superior to any General on the Northern side. General Winfield Scott became Commander-in-Chief of the Federal Armies until November 1861, when he was succeeded by McClellan, who in his turn was succeeded by General Halleck in July 1862. Halleck retained command till March 1864, when General Ulysses Grant became Commander-in-Chief of the United States Army.

At the beginning of June 1861 the Federals under Patterson re-
 Affairs in Eastern gained possession of Harper's Ferry, while
 Theatre. Abraham Lincoln and General Scott (the then
 Commander-in-Chief) planned the invasion of the South, the initiatory
 movement of which was the advance on Manassas Junction, where
 important rail-roads from Richmond, Alexandria, and the Shenandoah
 Valley met. General McDowell with 28,500 men and 49 guns marched
 on July 16th against the Confederate (Southern) Army at
 Description of the Manassas. Bearing in mind that the Americans
 first Federal Army. were not accustomed to war, and that we are
 now about to look on the first great battle waged between two armies,
 composed chiefly of practically untrained men, undisciplined, and in-
 experienced recruits, it is interesting to study their action and be-
 haviour. The Federal advance from Washington to Manassas was
 slow from two causes principally:—

- 1st.*—From want of practice in marching, coupled with the
 haziest ideas of discipline, General McDowell says—"The
 men stopped every moment to pick blackberries or to get
 water; they would not keep in the ranks, order as much
 as you pleased; they were not used to denying themselves
 much; they were not used to journeys on foot."
- and.*—Shortly before this a body of Federal troops had been
 terribly cut up by the Southerners at a place called Big
 Bethel, and both Commanders and men were nervous
 about falling into ambuscades, and had not yet learned
 how to work their cavalry during an advance.

The Confederates also at the commencement were equally raw
 hands, but before long we see these two undisciplined armies trans-
 formed by experience and training into as splendid soldiers as the
 world has seen, performing prodigies of valour, teaching other nations
 valuable lessons in the handling of cavalry, able to march great
 distances with celerity, fighting day and night, sometimes for weeks
 together, while "all the world wondered." But in their first great
 battle on July 21st, 1861, known as Bull Run or 1st Battle of

Manassas, we look on the conflict of an undisciplined rabble, glorified by superb and reckless courage; but, compared to the grand state of efficiency they afterwards attained, the two contending forces at Bull Run were simply a courageous rabble, lacking coherence.

"They acted upon individual judgment and impulse rather than as organised bodies; and at 4 P.M. on the 21st there were more than 12,000 Volunteers on the battle field who had entirely lost their regimental organisation. They could no longer be handled as troops, for the officers and men were not together; this disorganisation did not result from defeat or fear."*

The extreme caution and slowness of their advance rendered it impossible for the Federals to surprise the rebel army, which on its part retired its outposts with undue haste, leaving tents, knapsacks, and even rations behind them.

Manassas lies on a high open plateau, 35 miles south-west of Washington. There the Southerners (Confederates) had some 2,000 men, and had thrown up small field works mounted with 14 or 15 heavy guns. The Bull Run River runs some 3 miles east of Manassas, and has wooded heights approaching its right bank. The stream is sluggish and fordable in many places, though with precipitous and rocky banks here and there. The main body of the Confederate Army was posted so as to defend the five fords, and occupied a line about 8 miles long.

It was McDowell's intention to try and turn the right flank of this position, thus cutting the rebels' line of communication with their Capital, Richmond. But General Tyler (Federal) frustrated his Commander's plans by rashly committing himself to a general engagement when he had been merely ordered to reconnoitre the enemy's position. The effect on the two armies of raw levies of this first taste of fighting was that, although only some 60 men fell on each side, both were somewhat shaken and demoralised; while the result of Tyler's rashness was that no good was attained, and it augmented the causes of the great disaster which followed, and McDowell had to abandon his intention of turning the Confederate right flank, and determined to endeavour to turn his left instead. In the battle which ensued the Southerners were at first worsted, but a timely and stubborn stand made by Stonewall Jackson helped to restore the battle, and the Federals were finally driven off the field.

Their first successful charges had created disorder in their ranks which apparently neither officers nor men knew how to remedy, and flushed with success they pressed on, and, when in their turn driven back, the confusion became worse confounded, and regiments and brigades got mixed up hopelessly.

This was one of the not very numerous occasions when the South outnumbered the North, the Confederates having 32,000 men and 57 guns to oppose the Federals 28,000 and 49 guns.

The North suffered a severe defeat, losing 2,952 in killed, wounded, and missing, against the Confederate loss of 1,752 men.†

* *The Outbreak of Rebellion*, pages 106-107. By John Nicolay.

† *Statistical Record*, page 213. By F. Phisterer.

The Federal Army streamed back to Washington where all was alarm and confusion. General McClellan was called from the command of the armies in the West, and given supreme control in the Eastern Theatre of War. A most able organiser, McClellan, set to work to raise and organise a new army, and by the commencement of the spring of 1862 he had a highly efficient force of 158,000 men ready to take the field, and termed the *Army of the Potomac*.

In addition to this, he had 55,000 men told off to garrison the defences of Washington, to watch the Shenandoah Valley, and to guard the Maryland Shore of the Potomac.

I will now turn to the Western Theatre of War, and sketch briefly the course of the whole war there up to the end, and then, in my next lecture, return to the East, and narrate the progress of events from McClellan's arrival at Washington, which I have just mentioned, up to the close of the war.

In the States of Missouri, Kentucky, Tennessee, and others west of the Alleghanies, opinions were divided, and while part of each State was for the Union, large numbers of people sympathised with the South.

Governor Jackson of Missouri endeavoured to detach his State from the Union, and raised the standard of revolt. With Sterling Price in command of the disaffected levies he established his head-quarters at Camp Jackson near St. Louis with the intention of capturing the arsenal in that city. But a young Federal officer, called Captain Lyon, Commanding the Union troops in St. Louis, disguised himself as a lady, drove out to Camp Jackson, inspected its strength, situation, approaches, etc., and next day, May 10th, 1861, marched out his small force, surrounded the camp, and gave the rebel General half an hour in which to surrender unconditionally—which he did. Lyon was made a Brigadier-General for this, and acting with promptitude and decision he commenced operations against the rebels, and on June 18th fought and won the battle of Booneville. Soon after this the rebels were heavily reinforced from Arkansas and Texas. Lyon, on July 10th, combined with Colonel Sigel at Springfield, while the rebel force marched, under General McCulloch, to a place called Wilson's Creek, some 10 miles south of Springfield.

The rebel force consisted of 5,300 infantry, 15 guns, and 6,000 cavalry, armed with flintlock muskets, rifles, and shot guns, and a number of unarmed horsemen. Lyon and Sigel had only 5,800 men, including sick and wounded, and about 17 guns; they made a night march on August 9th, 1861, and attacked the Confederates at 6 A.M. on the 10th, and inflicted a defeat on them; but Lyon was killed.

More Federal troops were poured into Missouri, and fighting continued on a more or less minor scale for the rest of 1861.

In Kentucky the majority of the inhabitants wished to remain neutral, but this was impossible. General Polk, formerly a Bishop of the Protestant Episcopal Church, accepted a commission as Major-General, and, moving up from Tennessee at the head of a considerable Confederate (Southern) force, seized Hickman and Columbus on the Mississippi in September 1861.

The objects of the Federals operating in the Western Theatre of War were to cut off from the East its main source of supplies of food and men—to effect which it was necessary to get command of the Mississippi; then to work down South and up through the Carolinas, and join hands with their armies fighting in Virginia. The fertile valley of the Shenandoah was also an important source of supply to the South, but the operations conducted there belong to the Eastern Theatre of War.

To carry out the objects of the war in the West the Federal forces were divided into three great divisions: 1st, *Titles of Federal Armies operating in the West.* the *Army of the Ohio*, under the command of General Don Carlos Buell, which, in October 1862, became the *Army of Cumberland* and was commanded first by General Rosencrans; 2nd, the *Army of the Tennessee*, which was commanded by General Grant in 1862, by General Sherman in 1863, and then by Generals McPherson, Howard, and Logan successively; 3rd, the *Army of the Mississippi* under General Pope, till he was called to Virginia. In addition to these armies, there was a large force under Banks, which was known as the *Army of the Gulf*, and which operated in Louisiana.

To oppose the Federal advance down South the Confederates took up a defensive line from Columbus on the Mississippi to Bowling Green in Kentucky. In the centre of this line lay Fort Henry on the Tennessee River and Fort Donelson on the Cumberland River. To break this line was therefore the problem the North had to solve.

Grant accordingly advanced against Columbus in November 1861, and fought the Battle of Belmont, but failed to take Columbus which General Polk, the quondam Bishop had fortified with massive earthworks, defended by 142 guns, mostly 32 and 64 prs. Meantime the Confederates tried to push northwards in

Kentucky, but were defeated in the Battles of Wildcat and Ivy Mountain. In January 1862 the Confederates, under Zollicoffer and Crittenden, pushed across the Cumberland River, and attacked the Federals (Northerners) under Thomas. The affair is known as the Battle of Mill Springs. A curious incident occurred in this

Battle of Mill Springs. action. Zollicoffer became convinced his men were firing on their comrades. He accordingly ordered them to cease fire, and rode forward and told the Federal

officer in command of the particular regiment in his front that friends were firing on friends. Colonel Fry, the Federal officer, accordingly ceased firing. Just then Zollicoffer's aide-de-camp rode up, recognised Colonel Fry as a Federal, and fired at him with his revolver. Fry returned the fire and shot Zollicoffer through the heart. The Confederates were defeated, but managed to escape across the river, and, by destroying the bridge and all the boats, prevented pursuit.

Grant, having failed to take Columbus and break through the Confederate line of defence, next advanced against Fort Henry in February 1862. He started on February 1st with 17,000

Fort Henry. men in boats up the Tennessee River, convoyed by 7 gun-boats. The troops disembarked some 3 miles below Fort Henry, and on the 6th marched to attack it by land, while the gun-boats shelled the fort from the river. It was speedily disabled, and the Confederate garrison endeavoured to escape to Fort Donelson, pursued by Grant's cavalry.

His next move was against Fort Donelson, the capture of which was no easy task, as the place and its surroundings were heavily fortified and manned by some 20,000 Confederates. After three days' severe fighting, in which the gun-boats again took part, the defenders capitulated. By the capture of Forts Henry and Donelson the Confederate line of defence from Columbus to Bowling Green was broken at its centre, and its flanks became therefore untenable, and General A. S. Johnston, the leading Southern General in the West, retired from Bowling Green to Nashville (Tenn.), while General Polk, the Episcopal soldier, evacuated Columbus, and fortified a position on the Mississippi lying between New Madrid and Island No. 10, where the river makes two great turns.

Before proceeding further I want to tell you something of these gun-boats and other vessels which played so important a part in the campaign, and waged a naval warfare far inland, hundreds of miles away from the sea, which is the more usual stage for naval engagements.

Description of the River Navy.

There* were 7 of these gun-boats in the Federal (Northern) inland navy. Each was 175 feet long, 50 broad, 6 in depth of hold, and of 512 tons burthen. The hull was flat-bottomed, with sides inclined at an angle of 45°, and projecting but 1 foot above the water. On the hull was a casemate, 150 x 50 feet, containing the guns and machinery. This casemate was of wood, plated with 2½ inches of iron at the forward end on each side of the engine. Each boat was a stern-wheeler and had a speed of 9 miles an hour. Each carried an armament of 13 guns, mostly 6-inch rifled ordnance. These boats were specially built for the war and were called by the soldiers "the turtles." In addition to these, there were two other iron-clads, the *Essex* and the *Benton*, of a 1,000 tons burthen. Three ordinary passenger boats of from 400 to 600 tons each had also been fitted up for naval purposes; they were not armoured, but carried 9 guns

* *The Mississippi*, pages 8, 9, 10. By F. V. Greene.

each. There were also 4 side-wheel and 4 stern-wheel vessels of from 200 to 400 tons purchased by the North, and adapted for use in the war. Another type of vessel was the "mortar boat," which was a scow of sufficient size to carry one 13-inch mortar; these mortar boats were towed from point to point by tugs. By the summer of 1862 the Federals had an inland fleet on the Mississippi of 45 vessels, with an armament of 143 guns, in addition to 38 mortar boats.

The Confederates, on their side, converted several boats by taking off everything above the hull, and constructing on it a wooden rampart plated with rail-road iron. Their armament was inferior to that of the Northerners, and their machinery was constantly breaking down. They had also several iron-clad rams of a cigar shape.

After the capture of Forts Henry and Donelson the Confederates took up a second line of defence, with their left resting on the Mississippi at Fort Pillow and Memphis, their centre at Corinth and their right at Chattanooga on the Memphis and Charleston Rail-road, New Madrid and Island No. 10 being retained by them as strong advanced posts.

Meantime there was fighting going on in Arkansas to the west of the Mississippi; there the South had a strong force (some* 30,000 or 40,000 men, including several thousand Indians) under Van Dorn, contesting the supremacy of North or South with General Curtis (Federal). The only fighting I have time to touch on in that part of the world is the Battle of Pea

Ridge. There, on March 5th, 1862, General Curtis was entrenched. During the night the Southerners under Van Dorn made a detour, and on the morning of March 6th Curtis found the enemy coming up on his right and rear—an awkward predicament. Curtis instantly faced his line to the rear and wheeled to his left, so that his new front faced West instead of about South. Pea Ridge is in places covered with timber and brush and is intersected by deep ravines, and a portion of it was a tangle of fallen timber, so that manœuvring was not easy. A fierce and determined battle ensued, marked by great gallantry on both sides, and lasted all that day and till noon on the 7th, when the Confederates under Van Dorn were thoroughly defeated.

Having broken the Confederate first line of defence, the North had now to face and break the second line. To General Pope was assigned the task of capturing New Madrid and Island No. 10, while General Grant, with the *Army of the Tennessee*, and General Buell, with the *Army of the Ohio*, moved down to co-operate with each other against Corinth.

Let us take the New Madrid and Island No. 10 position first. New Madrid is situated on the Missouri side of the river at the second bend and Island No. 10 at the first great bend of the river; it commanded for a great distance the approach down the river.

* From *Fort Henry to Corinth*, page 13. By Major-General M. F. Force.

The defences of the position had been ably planned and carried out, and the Confederates had a large amount of artillery; nevertheless, after being attacked at New Madrid by the Federals under Pope on March 13th, 1862, they evacuated that portion of their line the same night. Two days afterwards the Federal fleet arrived to assist in the capture of Island No. 10. Heavy fighting by land and water ensued for some days, including an artillery duel, in which 100 heavy guns, some of them 128-prs. took part, in addition to smaller ordnance. These operations teem with interest for the engineer, the artilleryman, and the naval officer as well as for the infantry soldier. For instance, not to be baffled by a hopeless swamp, 12 miles broad, over which no road could be made, the Federal engineers conceived and carried out the idea of cutting a canal through it, passing for 6 miles out of the 12 through a dense forest of large trees. This work, presenting almost insurmountable difficulties, was carried out in 19 days, and steamers and barges were enabled to use this new waterway, thus solving the problem as to how General Pope could, with safety, get troops across the river. Even then the Confederate batteries were so formidable that the crossing of his army in their teeth would have been attended with great danger. He therefore constructed floating batteries. Each battery consisted of three heavy barges lashed together; on the centre one 3 heavy guns were mounted, and it was protected with 4 feet of solid timber at the ends and sides. On each centre barge were also 80 sharp-shooters. The barges on either side of each centre barge were packed close with cottonwood rails and cotton bales, so that before a shot could strike the centre barge it would have to pass through 20 feet of rails and cotton; the outer barges could not sink, as they were filled at the bottom with water-tight empty barrels lashed together. These floating batteries were towed to a certain place by steamers, and then allowed to float down stream to a point where they anchored, and opened fire on the Confederate batteries at short range.

Dramatic is the story of how the Federal gun-boat *Carondelet*, alone and on a stormy night, ran the gauntlet of all the Confederate ships and batteries and their great guns. At 10 P.M., on a dark and stormy night, the little gun-boat started on her daring voyage. The deck was covered with heavy planks, and surplus chains were wound round her vulnerable parts; guns were run back, ports closed, and the sailors armed to resist boarders. Directions were given to sink the boat rather than let her fall into the Southerners' hands. Twenty sharp-shooters were put on board, and a barge, laden with bales of hay, was fastened to her port side to break the impact of shot and shell. Scarcely had she started as noiselessly as possible on her journey than her smoke stack caught fire; but the blaze was extinguished without the Southern batteries perceiving it, but just as she was passing the upper battery, the flame burst out again, revealing and proclaiming the mission of the boat. Sentries on shore fired, guards turned out, rockets darted skyward, heavy guns opened fire, while at the same moment the storm broke, and brilliant flashes of lightning brought the little *Carondelet* into full view, and terrific

crashes of thunder drowned the roar of the artillery. Full speed ahead was now ordered by Commander Henry Walke, but, impeded by the barge alongside, the gun-boat's progress was slow. For half an hour she toiled on through a storm of shot and shell, until she had passed the last battery, and then unharmed, untouched, she fired the pre-concerted signal, and the fleet and army, which had been anxiously watching for it and hardly daring to hope to see it, knew at midnight the *Carondelet's* passage had been successful.* A few days later a second gun-boat performed the same feat, and the two together silenced the batteries at the spot where Pope wished to land his troops. On April 7th the Confederates were in full retreat and Island No. 10 surrendered on the 8th. The advanced posts of the Confederate second line of defence thus fell into the hands of the Federals; and the Mississippi River was opened up down to Fort Pillow. Pope arrived at Fort Pillow on the 14th with the intention of attacking it, but was ordered to Pittsburg Landing near Shiloh on the Tennessee River, where he arrived in time to take part in the advance thence on Corinth. Meantime on April 6th, simultaneously with the fighting in the neighbourhood of Island No. 10, the great Battle of Shiloh had

been fought. I have told you Grant and Buell advanced on Shiloh. advanced with a view to concentrate and attack the centre of the Confederate line at Corinth; Grant marching from Fort Donelson and Buell from Nashville. General Halleck was at this time in supreme command in the West. Grant conveyed his army by river to Pittsburg Landing and Savannah (Tenn.) and began disembarking them on March 11th, 1862. On the following days he took up a strong position about Shiloh, some 20 miles north of Corinth, one of his Divisional Commanders being the well known General Sherman. Buell was marching his 37,000 by land; and, in order to prevent the clogging and intermingling of divisions on the soft wet roads and the alternate crowding up and lengthening out of columns, he ordered his divisions to march at intervals of 6 miles, thus lengthening out his column of route to 30 miles. At Corinth there were gathering together all the available troops the South could lay hands on under the command of General A. S. Johnston. His object was to strike at and overwhelm Grant at Shiloh before Buell effected a junction with him. He delayed just a day or two too long and failed. On April 3rd he began his march on Shiloh from Corinth, dividing his army of 40,000 men into 3 corps under Polk, Bragg, and Hardee, with a reserve under Breckenridge, and leaving, in addition, 10,000 men to hold Corinth; General Beauregard was his 2nd-in-command.

This was a force greater than Grant's and Buell's armies separately, but less than theirs when they effected a junction.

On April 5th some skirmishing took place, and so poor was the Federal Intelligence Department that Grant, not knowing that 40,000 men were close upon him, wrote to Halleck that very day, and said

*From *Fort Henry to Corinth*, pages 84, 85, 86. By Major-General M. F. Force.

he did not anticipate any attack being made upon him; he further estimated that the Confederates had 80,000 men at Corinth! The next morning the Confederates attacked him in three lines, but so broken and thickly-wooded was the country that the lines could not advance without overtaking each other, and great confusion occurred.

The Battle of Shiloh was one of the most furiously contested and sanguinary ones of the war. By night the Confederates had driven Grant's army back some two miles; some ten thousand men on each side were killed, wounded, or missing; and General A. S. Johnston, the Confederate Commander, was killed.

During the fight, that first day of the battle, the advance of General Buell's army arrived in time to stem the tide of victory. Though the Confederates had been so far successful, they were in such inextricable confusion that the Federals next morning attacked in their turn, and, aided by Buell, completely defeated them and drove them back to Corinth. The Federals, however, did not advance till the end of April, or they might have taken Corinth at once. General Halleck arrived a few days after the battle of Shiloh and took over supreme command, and during the rest of April fresh troops from the North poured in till Halleck's army amounted to 100,000 effective men. General Beauregard succeeded General A. S. Johnston in the command of the Confederate forces at Corinth, and received reinforcements which brought their strength up to some 53,000

Confederate position men.* His position at Corinth was a strong one. It was on a long ridge rising in the fork of two streams which run parallel to each other nearly to their junction; the position was protected on the front and both flanks by swampy valleys obstructed by dense thickets, while a line of earthworks ran along the crest of the high land bordering the valleys. These works were screened from view by a belt of timber. Railroads coming into the town facilitated reinforcement and supply.

Beauregard kept strong parties well advanced to his front as far out even as Monterey, some 11 miles from Corinth. The Federals were too absorbed in re-organising their army to even ascertain his position.

Meantime on April 8th, the day after Shiloh, Morgan, a famous irregular cavalry leader on the Confederate side, commenced one of his great and successful raids through Tennessee and Kentucky, which lasted through April and May, during which time, with a mere handful of 500 men, he harassed the federals on their lines of communication, and did a considerable amount of damage.

On April 27th, 1862, three weeks after the Battle of Shiloh, the Federals discovered Monterey was held in force as an advanced post to Corinth. The next day they took the place, but, although Corinth was only some 20 to 23

* Beauregard's return, showed a nominal strength of 112,000, but this included vast numbers of sick, wounded and absentees. *From Fort Henry to Corinth*, page 184. By General M. F. Force.—F. M. R.

miles from Shiloh, it was not till a month later (May 28th) that they got within striking distance of the works around it.

Beauregard, the Confederate Commander, did not make the determined stand at Corinth that he might have done. The Federal cavalry, under Elliot, rode round him, and striking the rail-road, some 40 miles in rear of Corinth, committed such damage that it was rendered useless for the purposes of evacuation. But on the night of May 29th the Confederate troops evacuated Corinth, and the Federals did not discover it till the morning. They then marched into the place and sent troops in pursuit, who did not come up with Beauregard till he was in a strong position, some 50 miles from Corinth; the Northerners then gave up the pursuit and returned.

On hearing of the fall of Corinth the Confederate garrison at Fort Pillow evacuated that place on June 1st, and on June 6th Memphis fell. The Mississippi was now open to the Northern Armies as far as Vicksburg.

On reading the accounts of the Battle of Shiloh and advance on Corinth one cannot help feeling astonished at—
Reflections on the Battles of Shiloh and Corinth.

1st.—The utter and culpable ignorance of the enemy's whereabouts in which Grant was content to remain. It is almost incredible that 40,000 men should have been close on to him without his having even an inkling of the fact.

2nd.—At the appalling confusion that reigned in the attacking force who had all the advantages of being the surprise party, and of choosing their own time and manner of delivering the surprise, and presumably of knowing something of the nature of the ground, as they were fighting in their own country.

3rd.—At the weeks of delay which occurred between the Battle of Shiloh and the advance of a few miles to Corinth.

4th.—At Beauregard giving up so fine a position without a desperate struggle.

Truly, there are almost more lessons to be learnt from what might have been done in a given campaign, and was not done, than from its successful strategy and tactics.

While the Federal Armies had been pushing downwards from Ohio, Kentucky, and Missouri, and bit by bit gaining possession of the Mississippi, a fleet under Admiral Farragut had been working upwards from the mouth of that great river; and between the Battle of Shiloh and the fall of Corinth, the Admiral made his famous passage of the Forts below New Orleans (Louisiana); captured that place with his war vessels and mortar boats on April 28th; advanced up the Mississippi, taking Baton Rouge on May 8th, Natchez on May 12th, and pushed up to

Vicksburg which was already strongly held. Having reconnoitred the place, and finding his force far too small to cope with such defences, he returned to New Orleans, leaving part of his fleet at Baton Rouge. On June 25th (1862), in obedience to orders from the Navy Department, he returned to Vicksburg which, by this time, was the only place on the Mississippi held in force by the Southerners. This time he took with him four regiments and two field batteries under Brigadier-General Williams (some 3,000 men).

His fleet consisted of three ships and seven gun-boats (total guns 106) and sixteen mortar boats, each carrying one 13-inch mortar.

In order to avoid running past the batteries at Vicksburg, the troops began digging a canal, with the help of 1,200 negroes, across the peninsula that juts out into the Mississippi opposite Vicksburg.

The object of course was to get past Vicksburg, and join hands with the Federal Armies coming down from the North. On the 28th June Admiral Farragut with part of his fleet ran past the Vicksburg batteries, suffering but little damage, and anchored some little way above that place, joining hands with the fleet under Davis which had come down the river; but Vicksburg was too strong for them to take, and the canal across the peninsula was destroyed in a night, before its completion, by a sudden rise in the river. So on July 15th he ran past Vicksburg again at night, and on the 27th took Williams' troops back to Baton Rouge, and then his fleet went on to New Orleans, while Davis returned northwards.

I have told you of the pluck and daring of the Northern (Federal) gun-boat *Carondelet*, and in common fairness I must give an instance of a Southern gun-boat's gallant deeds. The Northern (Federal) Fleet had, while in the vicinity of Vicksburg, heard of the building, in some place unknown, of a mysterious iron-clad which was to work wonders. The Admiral had searched for her, but could not find her. Suddenly, on the morning of July 15th, the mysterious iron-clad issued from the Yazoo River. She was called the *Arkansas*, was commanded by an intrepid Lieutenant named Brown, and was merely a river steamer coated with such iron as was procurable, but of rough workmanship. She was manned by volunteers from the Southern Army, many of whom had never before been on boardship, and were quite unaccustomed to the use of big guns. She carried three guns on each side—one at the bows and another at the stern. Her Commander calmly purposed to force a passage through the Federal Fleet of 18 gun-boats and seven rams and destroy them. At 5 A.M. she moved swiftly down the Yazoo River. The Federal gun-boats saw her and immediately perceived she was the much talked of iron-clad. Seeing her boldly advancing, the Federal fleet probably thought there were several other iron-clads behind her, for the *Tyler* and *Queen of the West*, after firing a few shots, turned and fled; the *Carondelet* attempted to bar her passage, but could not stand against her guns, and her steam pipe bursting, she was driven ashore. The inhabitants and soldiers of Vicksburg crowded to the ramparts to watch their gallant little champion fighting the remaining 15 gun-boats and seven rams single-handed. Down the river she came with the *Queen of the West* and

Tyler flying before her, and the rest of the Federal fleet in confusion, unable to believe so small a boat was attacking alone a fleet carrying 200 guns.

Soon she was in the midst of the fleet, whose guns opened on her on all sides, while the rams tried to butt her and run her down. Still she held on her course and poured her broad sides into her foes and disabled one ram, and, though much injured, held steadily on through the whole fleet; and at last, amid the cheers of the defenders of Vicksburg, rounded the point, and anchored in safety under shelter of its batteries. I mention this incident to show there is not much to choose between North and South as regards grit and pluck. Truly, when our trans-Atlantic brethren get their foot on a boat, and there is a chance of a row in front, the old Norse blood, which we both inherit from our common ancestors, surges and leaps in their veins, and urges them to deeds of daring worthy of Nelson.*

A small force of Confederates (about 3,000) under General Breckenridge then marched to attack Williams, but were defeated on July 31st in the Battle of Baton Rouge.

General Halleck (Commanding the Federal Armies in the West) General Halleck's might at this time have taken Vicksburg and incompetence. gained entire control of the Mississippi, as, after taking Corinth on May 30th, he had, mostly assembled at or near Corinth, the largest army ever collected together west of the Alleghanies, *viz.*, some 137,000 effectives.† But he let the opportunity go by, and the Southerners regained possession of the river up to Helena and erected batteries at Natchez, Grand Gulf, Vicksburg, Port Hudson, and a short distance up the Arkansas River. Opposed to the Federal Armies the Southerners had about 105,000 men, of whom 57,147 effectives were retreating under Beauregard from Corinth along the Mobile and Ohio Rail-road; 2,000 were near Chattanooga; 12,000 near Knoxville confronting Morgan at Cumberland Gap, Tennessee; about 8,000 in Vicksburg; and some 26,000 in Arkansas, who were, however, but poorly armed ‡

* Vide *History of the American War*, Volume II, pages 46-49. By Lieutenant-Colonel Fletcher.—F. M. R.

† Federal (North) Armies west of the Alleghanies on June 1st, 1862—

Fit for duty in the vicinity of Corinth	...	...	108,538
" " " under Mitchell at Huntsville (Ala.)	...	...	6,500
" " " Morgan at Cumberland Gap (Tenn.)	...	...	9,000
" " " at Nashville	...	...	3,000
" " " under Curtis in North-West Arkansas	...	...	10,000
Total	...	...	<u>137,038</u>

The Mississippi, pages 29-30. By F. V. Greene.—F. M. R.

‡ The paper strengths were—

Federals	...	...	...	...	220,000
Confederates	...	...	...	...	175,000

but these figures include sick and absentees.—F. M. R.

Apparently Halleck's best course would have been to send Buell's Army (*Army of the Ohio*) to seize Chattanooga with all speed, and cut off communications with Richmond by the Memphis and Chattanooga Rail-road, while he himself hurried after Beauregard's more or less demoralised army; and, seizing Vicksburg, gain entire control of the Mississippi. But instead of this he sent Buell to practically potter over rail-road repairs; he stopped Pope's pursuit of Beauregard, and sent him into camp at Rienzi, about 15 miles south of Corinth; he ordered Sherman to Memphis, while he himself remained at Corinth till July 16th, when he went to Washington to become Commander-in-Chief, and then appointed no one to succeed him in the command of the Western Armies. The result of Halleck's feebleness and lack of energy was that,

Result of Halleck's incompetence.

while his troops were scattered about trying to hold and repair 300 miles of rail-road—from Memphis to near Chattanooga—running parallel to the enemy's front, that enemy under Bragg (who had superseded Beauregard) seized the initiative, divided his forces, and by a move, which was pre-eminently remarkable for its boldness, its skill, and its success, transferred a part of his army to Chattanooga, whence he led Buell a stern chase straight to Louisville, right up in the north of Kentucky. The Union (Federal) opportunity was thus lost, and Bragg was allowed to control the course of events in the West; the Union Armies were not again united until Vicksburg had been taken, and the whole force put under Grant's direction in order to drive Bragg out of Chattanooga,* *i.e.*, 18 months after the fall of Corinth.

Meantime, about July 1st, Morgan and Forrest, two dashing cavalry leaders on the Southern side, started raiding in Kentucky and Tennessee. They acted more or less independently of each other, and their bands were of formidable dimensions for guerilla tactics, Morgan having some 4,000 men and several guns; Forrest appears to have had some 2,000. They did an infinity of damage to the Federals' lines of communication, destroying bridges, rail-roads, and a vast amount of supplies. They fought several affairs, some of which are worthy of the name of battles—notably the Battle of Murfreesboro' (Tenn.), fought and won by Forrest on July 13th, 1862; the Battles of Tomkinsville, Lebanon, and Cynthiana (Kentucky) fought and won by Morgan between the 1st and the 18th of July 1862. Morgan used to send telegrams in the names of Federal Generals, without the slightest regard for truth, which altered the destinations of Federal troops and created the direst confusion. He was absent just 24 days, during which time he rode over 1,000 miles, captured 17 towns, destroyed all the Federal supplies and arms found therein, dispersed about 1,500 Home Guards, and paroled nearly 1,200 regular troops, losing only 90 of his own men.† These raids were so formidable that Buell was compelled to organise his cavalry into united bodies

* Quoted *verbatim* from *The Mississippi*, pages 33-34. By F. V. Greene.—F. M. R.

† *The Army of the Cumberland*, page 40. By Brigadier-General H. M. Cist.

in a manner more suitable for defensive and offensive movements against these guerilla leaders. On the departure of Halleck for Washington, although he had appointed no one to succeed him, the

Grant succeeds Hal-
leck in the West.

command virtually devolved on Grant. General Pope was transferred to the command in Virginia, and Rosencrans succeeded Pope in the command of the *Army of the Mississippi*. The dispersion of Halleck's army, combined with Bragg's bold offensive (which I have told you drew away Buell back northwards into Kentucky) and, possibly, the disasters sustained by the Northerners in Virginia, reduced all the Union Armies in the West to the defensive. Grant was compelled to send three divisions of Rosencrans' army to reinforce Buell who was hard pressed by Bragg, thus leaving himself only 42,000 men with which to guard 200 miles of road from Memphis to Decatur (Alabama), and to keep open his communications with Buell.* Bragg had left behind him in Mississippi Van Dorn and Price to defend the river and the Mobile and Ohio Rail-road. These two Confederate Generals combined to prevent Rosencrans from suc-

Battle of Iuka.

couring Buell, advanced to Iuka, a place on the Memphis and Charleston Rail-road, some 20 miles south-east of Corinth, and fought the Battle of Iuka on September 19th, 1862, but were defeated by Rosencrans. Van Dorn and Price then combined again at a place called Pochahontas, some 20 miles north-west of Corinth, and marched against Rosencrans who again defeated them in the Battle of Corinth on October the 3rd and 4th (1862).

Battle of Corinth.

After this battle it was the Confederates who were thrown upon the defensive in Mississippi, but, owing to party squabbles at headquarters in Washington, Grant was unable to get any definite permission to assume the offensive against them till the end of November 1862, when he moved in the direction of Vicksburg.

We will now glance briefly at what the Southern General Bragg was doing with Buell in Kentucky. On the 22nd August 1862 Buell learnt that the whole of Bragg's army had moved north of the Tennessee River somewhere in the direction of Chattanooga. But so poor was his intelligence and so skilfully did Bragg conceal his intentions that Buell did not know whether to expect an attack on Nashville (Tenn.) or elsewhere, and so, on August 30th, he gave orders for the concentration of his army at Murfreesboro' (Tenn.). Bragg's objective, however, was Louisville (Ken.), and with 35,000 men (divided between Polk and Hardee) he pushed north, down and across the valley of the Cumberland River, the object of the campaign being to free the South from the Federal Armies by carrying war into the North far to the rear of all their armies. To accomplish this a Southern force under Kirby-Smith was to push through Eastern Kentucky on to Cincinnati, a great Federal supply depôt, while Bragg marched

Bragg and Buell in
Kentucky.

* *The Mississippi*, pages 35-36. By F. V. Greene.

through Central Kentucky to Louisville, and then to enter the rich fields of the Northern States.* The Confederates under Kirby-Smith, advancing through the Cumberland Mountain passes, drove back the Federals, defeated them at the Battle of Richmond (Kentucky), August 30th, 1862,† and marched rapidly and boldly on Cincinnati, and waited near that place to form a junction with Bragg. The South had expected Kentucky would rise in their favour and swell the Confederate Armies, but the sympathies of Kentucky were with the North. The result of this was the failure of Bragg's daring campaign.

Buell started in pursuit of Bragg on September 7th, and there was a race between the two armies to get to Louisville first.

Buell dropped some of his army at Nashville to guard that important place, and pushed on as fast as possible. Bragg reached Mumfordsville first. The place held out, and then occurred an extraordinary event. Bragg, under a flag of truce, personally explained to the Commander that it was impossible for him to hold out; that he, Bragg, was so strong that he could easily take the place by assault, but that that would entail a useless waste of life. The Federal Commander asked Bragg's permission to visit the Confederate camp, and see for himself if these statements were true. Bragg gave permission, and the two together went round and inspected Bragg's dispositions, with the result that the Federal Commander was satisfied his statements were true, and surrendered the place on September 17th.

Buell overtook Bragg owing to the delay at Mumfordsville about the 19th September, and the two armies manœuvred for some days till Buell, seizing his opportunity, got into Louisville with his army on September 29th.

The two armies met in conflict on October 8th in the Battle of Perryville. Perryville close to Louisville when Bragg was defeated by Buell and retreated South. Kirby-Smith's force, meantime, had joined hands with Bragg.

Buell followed up the retreating Confederates, and various minor affairs took place. The Southerners were pushed steadily back to the Cumberland Mountains, and then Buell withdrew his army with the intention of marching on Nashville, as he was convinced that there Bragg would fight his great battle for the possession of Kentucky. However, on October 30th, Buell, having shown the impossibility of carrying out some preposterously foolish orders of Halleck's,‡ was deprived of his command by the latter, and Rosencrans succeeded him, while the designation of the army was changed from the *Army of the Ohio* to the *Army of the Cumberland*.

* *The Army of the Cumberland*, page 51. By Brigadier-General H. M. Cist.

† That is, on the very same day that Buell ordered his army to concentrate at Murfreesboro', the main body of his enemy had crossed the river behind him and was advancing on his base, Louisville, while a formidable body of them was actually fighting and winning a victory, nearly 200 miles in his rear.—F. M. R.

‡ Halleck insisted that Buell should make a campaign into East Tennessee, a distance of 240 miles, over mountain and river, without any communication to the rear except by wagon train, over almost impassable roads, the advance to be made in the face of an enemy, who, operating on his line of communications, could move his entire command to defeat our advance in detail. *The Army of the Cumberland*, pages 71-72. By Brigadier-General H. M. Cist.—F. M. R.

Bragg then detached some 10,000 of his troops under Breckenridge to besiege Nashville. The siege began about November 5th and, lasting some weeks, was eventually raised; meantime Morgan and Forrest (Confederates) were again raiding in that part of the world, and doing an immense amount of injury to the Federals. Rosencrans (Federal) commenced active operations on taking over command of the Army of the Cumberland, and Bragg retreated into Tennessee. A good deal of fighting took place—notably at Murfreesboro' or Stone's River, which battle was practically drawn (December 31st, 1862, to January 2nd, 1863). It was a fiercely contested engagement, the Federals losing 11,500 men and the Confederates some 14,500*. Bragg retreated to Tullahoma, and there we must leave him for the present.

I told you that Grant began moving in the direction of Vicksburg at the end of November of this year, 1862. He advanced southwards, driving the Confederates before him as far as Oxford, which place he reached December 5th, 1862. He then determined to send Sherman down the Mississippi River in boats, along with the fleet, to reduce Vicksburg. Sherman's expedition started on December 20th.

But just then Forrest, the famous Confederate cavalry leader, made a raid in Grant's rear, and, with a loss of less than 400 men, destroyed the rail-road from Jackson (Tenn.) to Columbus (Ken.), a distance of 60 miles, killed, wounded, and captured some 2,500 Federals, cut off Grant's communications with Columbus and the North and therefore with Washington from December 19th to 30th, and interrupted his convoys with supplies for a longer period. It was this Forrest who said he "would rather have 15 minutes bulge on an enemy than a week's strategy"! At the same time Van Dorn (Confederate General)

with 3,500 cavalry raided on Grant's line of communication between Holly Springs and Grand Junction, surprised and captured 1,500 Federals, and destroyed supplies to the value of 1,500,000 dollars.

These raids compelled Grant to put his army on reduced rations and fall back and open up his communications with Memphis, thus rendering any further advance on his part impracticable for a time. Sherman, meanwhile, had sailed down the Mississippi with about 32,000 men and 60 guns. He disembarked his force on December 26th near the mouth of the Yazoo River, and on the 29th he fought the Battle of Chickasaw Bluff where he was defeated and had to re-embark his troops. General McClernand, having worked his own interests in Washington at Army Head-quarters, superseded Sherman on January 2nd, 1863. Thus the first move against Vicksburg failed.

Battle of Chickasaw Bluff.

* This was practically a seven days' battle owing to more than heavy and continuous skirmishing which took place before the principal day's fight. General Cist terms this battle of Stone's River one of the fiercest contests of the war. But for Rosencrans' superb Generalship at a critical moment, when crushing defeat seemed inevitable, and but for his refusal to listen to the advice of his Generals to retreat, the Federal Army would have been annihilated.—F. M. R.

The War in 1863.

In January 1863 McClelland and Sherman moved up the Arkansas River with the gun-boats and attacked the Arkansas Post on January 11th by river and land. The Confederates surrendered to them.

Towards the end of January 1863 Grant commenced operations from the Mississippi River against Vicksburg. He made four unsuccessful attempts to attack Vicksburg on its right flank (looking towards the river). These are known as the Bayou expeditions, because the scene of operations consisted of an intricate mass of bayous, swamps, creeks, and marshy ground. Finding it useless to make any further attempts in such a hopeless country, he determined to work round below Warrenton and Grand Gulf, which the Confederates had fortified. Time will not admit of my dwelling on these most interesting operations, or telling you of the canals laboriously dug ; of the extraordinary efforts of gun-boats to work through the intricacies of bayous encumbered with trees and canebrake and driftwood ; of the dramatic spectacle of gun-boats running the gauntlet of the Confederate batteries at Vicksburg at night, while, by the glare of burning houses fired by the Confederates themselves, the gun-boats fought their fierce running fight, firing broadsides into the streets as they sped past only a few yards distant from the bank of the river.

Nor can I do more than just refer to the fine cavalry raid under Grierson (Federal) which took place in April and May, when this body of cavalry rode 600 miles in 16 days, destroyed 50 or 60 miles of railway and telegraph and a large amount of Confederate property, and inflicted severe losses on their enemy out of all proportion to their own, and caused 5 or 6 brigades, which the South could ill-spare, to be sent out to try and stop them—not one of which succeeded in doing so. Grant, aided by this raid, crossed his troops over the Mississippi, at a place called Hard Times, about opposite to Grand Gulf, landed them at Bruinsburg on April 29th, 1863, and fought the Battle of Port Gibson on May 1st, where 8,000 Confederates made a grand stand against the 23,000 he put into the field against them.

Grand Gulf was abandoned next day by the Confederates, and the Vicksburg position was now successfully turned on its left flank (looking towards the river).

In 18 days from his landing at Bruinsburg Grant accomplished a succession of brilliant feats which "challenge comparison with the most brilliant campaigns of history."* His force numbered some 45,000 men, while that of the Confederates was quite 50,000. The operations during these 18 days constituted what is called the *Campaign in rear of Vicksburg*, and included the successful engagements of Port Gibson, Raymond, Jackson, Champion's Hill, and Big Black Bridge. Making the important railway junction at Jackson his

* Lieutenant F. V. Greene, U. S. Engineers, in his *Mississippi*, page 135.

first objective, he then moved West on to Vicksburg. On May 19th and on the 23rd he tried to take Vicksburg by assault, but failed. He then systematically besieged it till July 4th when it surrendered.

The Confederate General J. E. Johnston, though he had it in his power to do so, never made any really energetic attempt to relieve the besieged till too late. He was then driven eastward to Jackson City by Sherman and there himself besieged, but he made good his retreat on July 16th.

Let us now see what was taking place elsewhere in the West during Grant's campaign against Vicksburg.

On December 15th, 1862, General Banks had arrived by sea at New Orleans with 15,000 or 20,000 men, with instructions to move up the Mississippi and co-operate with Grant, and then to occupy the Red River country (Louisiana) as a protection for Louisiana and Arkansas, and a basis of future operations against Texas. Part of his force occupied positions along the Gulf of Mexico stretching from Florida to Western Texas and up the Mississippi to near Port Hudson.* He did not join hands with Grant, but tried, by operating in Louisiana, to strike at the source from which Vicksburg and Port Hudson mainly drew their supplies, *vis.*, Louisiana and Texas.

The most notable features during these operations from Brashear City to Alexandria were Admiral Farragut's attempt to run past the Confederate batteries at Port Hudson on the night of March 14th, 1863, an extremely gallant fight in which the Admiral lost 5 out of his 7 ships; and the expedition in Bayou Teche which included the engagements at Fort Bisland and Franklin in April, the capture of Butte à la Rose, and occupation of Opelousas on April 20th; and, finally, the occupation of Alexandria on the Red River on May 9th, in which the gun-boats co-operated by steaming up the Red River from the Mississippi.

Banks then moved his force across the Mississippi to attack Port Hudson. Having received additions to his force, he invested this place with 30,000 men on May 25th. He made two unsuccessful attempts to take Port Hudson, but the garrison finally surrendered on July 9th.

While Banks was engaged in the siege of Port Hudson, the Confederates, whom he had driven back in his operations from Brashear City to Alexandria, returned and retook Brashear City, attacked Donaldsonville, and threatened New Orleans in his rear. Directly Port Hudson surrendered therefore, Banks moved part of his force down to Donaldsonville, attacked the Confederates, and retook Brashear City. The Confederates then retreated to Opelousas until the opening of Banks' Red River Campaign in 1864.

* *The Mississippi*, page 210. By F. V. Greene.

During the siege of Vicksburg the Confederates in Arkansas attempted to make a diversion, to help their beleaguered comrades, by attacking the Federal Post of Helena on the Arkansas bank of the Mississippi. The attack was made the very day Vicksburg surrendered, and was unsuccessful.

With this failure, and the fall of Vicksburg and Port Hudson, the control of the Mississippi passed finally into the hands of the Federals.

I am compelled now to go back to Bragg whom we left at Tullahoma after the Battle of Stone's River or Murfreesboro' on January 2nd, 1863. For the next 6 months the military operations in that part of the world were of a comparatively minor character owing to the need both sides had for recuperation.

In order to cope with the Confederate cavalry in their terribly obstructive and destructive raids in his rear, Rosencrans (commanding the *Army of the Cumberland*), having less of that arm than the Confederates, organised mounted infantry with, apparently, profitable results.

On June 23rd (1863) he ordered an advance on Tullahoma, the main body of the Confederates under Bragg being at that time strongly entrenched at Shelbyville, 20 miles north of Tullahoma, their right at Wartrace protected by cavalry at McMinnville; their left protected by cavalry at Columbia. At Tullahoma Bragg had a large entrenched camp, and had established his main depôt for supplies drawn from his base at Chattanooga.

Fighting commenced on June 27th; Rosencrans' mounted infantry did splendid service, riding round in rear of Tullahoma, and destroying bridges, rail-roads, etc. Bragg did not wait to be attacked at Tullahoma, but commenced to retreat on Chattanooga on July 1st, reaching that important place a few days later by crossing the Cumberland Mountains, and threw up strong entrenchments. This was only a 9 days' campaign of Rosencrans, but it included the Battles of Beech Grove, Guy's Gap, and Shelbyville; it gave the North the possession of Middle Tennessee, and, conducted as they were in the worst rains Tennessee had ever known, the operations of these 9 days were a triumph of strategic art.

Rosencrans now waited a few weeks for the harvests to ripen before attacking Chattanooga. It was a place of the highest importance, being the gateway to East Tennessee and North Georgia. The country to be traversed was mountainous and very difficult, the Tennessee River had to be crossed, and ammunition for two great battles and 25 days' supplies had to be taken. In the way in which Rosencrans achieved success, his genius stands out in high relief.

Rosencrans advances on Chattanooga. He began his advance on August 16th (1863). His plan, a bold and hazardous one, was to make a feint on Chattanooga, while he turned Bragg's left flank,

The skilful manner in which he performed successfully this feat repays careful study. By September 4th the whole of his army (between 50,000 and 60,000 men) were safely across the river. Chattanooga was evacuated by the Confederates who retired and took up a strong position on the Chickamauga Creek, and on September

Battle of Chickamauga. 9th Rosencrans occupied Chattanooga. Then

followed that terrific engagement known as the Battle of Chickamauga, fought amongst difficult and broken hills and ravines, which lasted for two days and a good part of the first night. The Federals lost some 15,800 men and the Confederates some 17,800.* The latter were finally successful, and drove Rosencrans and his beaten army back to Chattanooga. Rosencrans lost this battle through the extraordinary mistakes made by his Generals, and a disastrous rout was only averted by the stubborn stand made by that fine Commander, General Thomas, who thereby gained the *sou-briquet* of the Rock of Chickamauga.

Bragg's army, too, largely out-numbered that of Rosencrans by something like 15,000 men.

The Confederates, though victorious, had suffered so severely that they could not follow up the Federals with any vigour. The latter, on arriving at Chattanooga, strengthened the existing entrenchments, and were practically besieged by Bragg, and nearly starved out. The authorities at Washington now, when too late, hastily started off the reinforcements which Rosencrans had previously asked for, and had been refused. He and two of his Generals were deprived of their commands, and ordered to appear before a court of enquiry, and General Thomas succeeded him.

Grant, whom we left victorious at Vicksburg, now succeeded to the supreme command of the armies serving on the Ohio, Cumberland and Tennessee Rivers, October 1863, and marched to Chattanooga to personally conduct operations against Bragg.

Meantime Burnside had been hastening from Lexington in Kentucky with a force of some 18,000 men to reinforce the beaten Federal Army at Chattanooga. With very great difficulty he had crossed the Cumberland Mountains and got beyond Knoxville. The Southern General, Longstreet, was sent to attack Burnside, and Grant instructed him to retreat to Knoxville and draw Longstreet after him. The result was that the Confederates lost the assistance of Longstreet's corps, which frittered away the time in the siege of Knoxville and minor operations about Knoxville, till the spring of 1864 when Longstreet was ordered to Virginia with most of his men.

What is known as the Battle of Chattanooga were really three detached actions forming part of a series of operations undertaken by Grant for securing his front and driving Bragg from the position

Battle of Chattanooga.

* Some accounts give the Federal loss in the Battle of Chickamauga as 16,336 and the Confederate as 20,950.—F. M. R.

whence he was really besieging Chattanooga. These three actions are the Battles of Chattanooga (or Orchard knob), Lookout Mountain, and Missionary Ridge, and were fought and won by Grant's army on November 23rd, 24th and 25th (1863). The Confederates were driven out of their entrenchments and utterly routed after some desperately hard fighting, and retreated South to Dalton.

In this battle Sherman was commanding the *Army of the Tennessee*, having succeeded Grant.

During the winter of 1863 the operations were of too minor a character to come within the scope of this lecture.

The War in 1864.

In February 1864 Sherman was sent by Grant to make a rapid movement *via* Vicksburg to Meridian to destroy Sherman's Raid. rail-roads and make it so difficult for the Southern Armies to operate towards the Mississippi that a small force would suffice to hold the great valley of that river, and thus enable Grant to operate against General J. E. Johnston who had superseded Bragg after the Battle of Chattanooga.

Sherman's operations were so successful that his subsequent campaign in North Georgia was undisturbed by any formidable demonstrations of the enemy in the valleys of the Mississippi and Lower Tennessee.

Meantime during that winter of 1863 Burnside's little army, Hardships of the harassed by Longstreet at Knoxville, had suffered terrible hardships; nearly starved to death, the half naked Federal soldiers hovered around their camp fires, some without coats and some without pantaloons, some with tattered blankets tied like petticoats about their waists. Words of sympathy and encouragement from their officers were, however, greeted with the cheery response—"It's pretty rough, General, but we'll see it through."* By March the pinch was over; in April Longstreet went to Virginia, and Burnside's gallant little army (which was termed the *Army of the Ohio* when the old one of that name became the *Army of the Cumberland*) marched south and concentrated with the armies at Chattanooga.

In the early spring of 1864 Grant went to Washington to succeed Halleck as Commander-in-Chief of all the Federal Armies, and Sherman succeeded Grant in the West. The Confederates under General J. E. Johnston who was considered second only to Lee as a General, were strongly entrenched at Dalton. Sherman commenced operations against them in May (1864), and by a series of masterly manœuvres drove them from Dalton to Atlanta, and, to use Grant's words, "accomplished the most gigantic undertaking given to any General in the War." Sherman's preparations for this campaign were most carefully made. He had 100,000 men and 254 guns

*Atlanta, pages 15-16. By Major-General J. D. Cox.

against the Confederates 80,000. To keep the Federal Army supplied with food, etc., it was estimated that 1,300 tons per day must be forwarded by rail; so no private individuals were allowed to travel by rail, and no private stores could be sent; every available engine and car was used. The troops marched by road, and the impedimenta of regiments and officers was cut down to one wagon and one ambulance *per regiment*, and one mule for the mess and personal baggage of each set of company officers! Similarly, Brigadiers and Division and Corps Commanders were ruthlessly cut down as regards their transport; one tent fly was the only shelter for Division and Brigade Head-quarters. When the Atlanta Campaign was half over one Divisional Head-quarter mess boasted that, beginning with no mess kit at all, they had managed to accumulate 1 tin plate, 4 tin cups, 3 empty oyster tins, 2 empty sardine boxes, and a coffee pot; while their cutlery consisted of a pocket knife and for a plate a biscuit known as "hard tack." These were said to be luxuries compared to the outfit of General Sherman who set a fine soldierly example of contempt for personal comfort. Undoubtedly such Spartan simplicity set free thousands of mules and carts for the transport of absolutely necessary supplies.

The idea of the Atlanta Campaign was that, while Lee was being pressed back in Virginia upon Richmond by Grant, Sherman was to force back Johnston upon and beyond Atlanta, the great railway centre in Georgia. Banks at the same time, moving from New Orleans on Mobile, was to operate thence as an auxiliary to Sherman. The Confederate General, Johnston, opposed to Sherman, having inferior numbers, adopted a plan of carefully entrenched lines—one succeeding the other—constantly tempting his enemy to assault his strong entrenchments, and then withdrawing, *at exactly the right moment*, to some previously selected position in rear. He sought thus to neutralise Sherman's numerical superiority, and yet was always ready, if opportunity offered, to take advantage of any mistake of Sherman's and beat him in detail.

The Atlanta Campaign is therefore replete with fine examples of defensive warfare on the one hand, and lessons in brilliant strategy and tactics employed by the attacking side on the other hand.

The Federals had, times without number, learnt at a heavy cost what appalling damage could be inflicted by guerillas and Confederate cavalry in their rear; so amongst other preparations to meet such contingencies, the Federal Engineers kept, ready made, a standard pattern of truss, the parts of which were interchangeable, while prepared timbers were kept stocked at safe points in rear. By this means burnt or broken bridges were repaired with the celerity of magic; across the chasms of the Chattahoochee River trestle bridges, hundreds of feet long, and nearly 100 feet high, were made with as little delay and trouble as if an ordinary little stream were being bridged.

The combatants, too, on both sides, taught by a long and costly experience, had become adepts at entrenching themselves strongly, and

rapidly, covering their front with formidable obstacles, the troops doing of their own accord what elsewhere requires the assistance of a corps of sappers. It was in this campaign that the Federals learnt that the French plan of attacking in columns, as followed and taught by the American drill-books, was an impossible formation when attacking the Confederate entrenchments. The attempt to use the column formation resulted in awful carnage, while but little damage was inflicted on their enemy.

The Atlanta Campaign commenced on May 7th, 1864, by the Federals advancing, through an intricate mountainous country, upon Johnston's entrenchments at Dalton. Heavy skirmishing and fighting took place till Sherman skilfully turned Johnston's left. In fact, until the fall of Atlanta on September 2nd, there was practically daily fighting, what are called skirmishes being often more worthy of the name of battles. Till the Dalton position was turned, the most noteworthy fights were Rocky Face Ridge, Buzzard Roost Gap, and a number of engagements round Dalton. On his left being turned on May 12th, Johnston retired upon Reseca where a bloody two days' battle was fought on

May 14th and 15th, after which he retired during the night in perfect order and with the utmost skill to Adairsville. Sherman made dispositions to attack him on the 18th, but found the Confederate Army had been divided—one part marching on Kingston, the other on Carsville. This manœuvre had been so managed that Sherman could not tell in which direction the main body had gone. The country was entirely a *terra incognita* to him and his army, and he had no maps worthy of the name. He was therefore compelled to advance with the utmost caution lest the Confederates should concentrate on one or other of his flanks, and annihilate it before the other could come to its assistance. The moving of 100,000 men through an unknown and practically unmapped country, far from one's base and with only a single line of railway connecting with that base, was no easy task.

Sherman eventually came across Johnston occupying a very strong position on a commanding chain of hills behind Carsville. It had been Johnston's intention to fall on and overwhelm one of Sherman's flanks, but through some misunderstanding the attack did not take place. Polk, the quondam Bishop, against Johnston's better judgment, induced him not to give battle in his strong Carsville position, and he retired through Cartersville. The Federals, meanwhile, took Rome where there was a considerable depôt of Confederate supplies and important factories.

Johnston then crossed the Etowah River and took up a strong position at a place called New Hope Church, somewhat south of Dallas, and covering the rail-road and Marietta. His position was on hilly and heavily wooded ground. Here, from May 25th to June 4th, Sherman skilfully manœuvred and Johnston as skilfully counter-manœuvred.

Here were fought the stubborn and sanguinary engagements known by the names of New Hope Church, Dallas, and Picketts Mill (or

Pumpkin Vine and Alatoona Hills); while not a day passed without furious skirmishing and great loss of life. Even at night there was no rest; the roar of artillery and the rattle of musketry being incessant, while troops were marching to take up new positions, and men toiled at entrenching work, the rain meanwhile pouring down in torrents and the thunder adding its crashes to the turmoil. The carnage was very heavy, but bit by bit Sherman gradually turned Johnston's flank, and the latter drew his lines closer round Marietta, and took up a strong position, including such commanding points as Lost Mountain, Pine Mountain, Brush Mountain, and Kennesaw Mountain.

Here again incessant fighting took place from June 14th to 27th, including the actions known as Pine Mountain, Culp's Farm, and Kennesaw Mountain, in one of which the Bishop, General Polk, was killed by a cannon ball.

Of course all this time the Southern cavalry was, as usual, busy on the flanks and rear of the Federals, but the damage inflicted by them was quickly repaired. Sherman failed in his attempts to break through Johnston's lines, but the latter, foreseeing that his flanks must be turned in time, had already begun constructing two lines of entrenchments in his rear, north of the Chattahoochee River, while fortifications were being constructed about Atlanta. On July 2nd Johnston retired behind his first new line behind the Nickajack Creek, but the weather having improved, and the country having become more passable, Sherman skilfully manœuvred round Johnston's left and got nearer to Atlanta than the Confederates themselves were. They promptly retired and finally entered the trenches round Atlanta on July 9th, and in a few days the Federal Army closed round them. Johnston's defensive movements had found no favor with the Richmond authorities, and Hood, one of his Generals, was ordered to supersede him and assume the offensive. The result was disastrous. The Confederates, leaving the shelter of

their entrenchments, attempted to attack a superior force in its turn carefully entrenched. The Confederates made a furious assault at Peachtree Creek, and failed with a loss of 6,000 men. Then followed the Battle of Atlanta, where Hardee, one of the Southern Generals, having made a fine night march, surprised the Federals in rear, and they had to leap out of their entrenchments and fight from behind the exterior slope of their parapets. Here again the Confederates suffered heavily, losing 10,000 men that day. After this they, still on the offensive, lost 5,000 men in the attack on Ezra Church. Finally, an action at Jonesboro' closed the campaign, and Hood evacuated Atlanta on the night of September 1st, and Sherman entered the place next day.

After this Hood made a raid with the remains of his army right round the Federal rear, attacking Alatoona and Reseca, and going as far back as Dalton where, if you remember, the Atlanta Campaign began.

But the raid, though daring, was of not much practical use, and the Federals met it skilfully and stubbornly, and still held on to Atlanta. Hood then marched northward into Alabama and thence into Tennessee, hoping to draw Sherman after him; but he failed in this, and, meeting the army under Schofield, forced him back gradually on Nashville (Tenn.), fighting the interesting Battles of Columbia, the crossing of the Duck River, Spring Hill, and Franklin on November 28th, 29th and 30th, 1864.

Battles of Columbia,
Duck River, etc., in
Tennessee.

tion with Thomas'

Battle of Nashville.

Schofield retired on Nashville, and effected a junction with Thomas' Corps. Here on December 15th and 16th was fought the great Battle of Nashville, in which Hood's army was hopelessly routed, and which broke down all further resistance on the part of the Confederates in that part of the West, with the exception of Forrest's Division, which was attacked and broken up by the Northerners under Wilson in two sharp encounters at Plantersville and Selma (Ala.) on April 1st and 2nd, 1865. It is interesting

Defeat of Forrest.

to note that at Plantersville the Confederate cavalry under Forrest, armed with repeating carbines, met and routed the Federal cavalry who were armed with sabres. Forrest was one of the finest and most successful cavalry leaders of the war, and General Cox, in his *The March to the Sea* says*—"Forrest, whose experience was equal to that of any one, had reached the conclusion that repeating fire-arms were the proper weapons for mounted troops, and he rejected sabres, using his force, from preference, as mounted infantry." Some other cavalry leaders in this war appear to have held this view as well. I think there is food for reflection in this, if you remember, that the men who held this view had been in far more cavalry fights and infantry and mixed engagements during those 4 years than has fallen to the lot of most non-American cavalry authorities that can be named. They spoke with all the force of hard, sharp, and convincing experience, not from a theoretical point of view. Forrest's maxim was a good one too, *viz.*—"Get there first with the most men." Sherman refused to be drawn away from Atlanta. He felt that it was all impor-

Sherman's march through Georgia. tant to march through Georgia and South Carolina and, by severing the connection of these States with the East, destroy their main source of supply, and then march on the rear of General Lee whom Grant was now pressing in Virginia. Accordingly, on November 15th, 1864, having first destroyed the defences of Atlanta, he cut all his communications with his rear, purposing to live on the country he marched through, and commenced his famous march through Georgia with 62,000 men. His general line of march lay at first between the Ocmulgee and Oconee Rivers, then turning East near Milledgeville he marched on Savannah. The opposition he met with was not of a nature to delay him.

General Cox says of this march—"The weather was perfect; the camps in the open pine woods, the bonfires along the railway, the occasional sham battles at night with blazing pine knots for torches, all combined to leave upon the minds of officers and men the impression of a vast holiday frolic; and in the reunions of veterans since the war

* *The March to the Sea*, footnote to page 207. By General J. D. Cox.

this campaign has always been a romantic dream more than a reality, and no chorus rings out with so joyous as well as when they join in the refrain "as we were marching through Georgia."* There was an affair at Honey Hill before Savannah City was invested, and then came the attack and capture of Fort McAlister, but the losses on both sides were slight, and the Confederates under Hardee evacuated Savannah on December 20th.

The War in 1865.

Sherman, delayed by weather and other causes, remained at Savannah till February 1865, when he commenced his march northward through South Carolina. To co-operate with him two Federal forces, proceeding by sea, captured Fort Fisher at the mouth of Cape Fear River (N. Car.) and Newberne at the mouth of the Neuse, and then marched on Goldsboro'.

Sherman's march through South Carolina was the triumphant accomplishment of a well nigh impossible task. The country was more or less a vast swamp or endless succession of swamps; streams would often be met with split up into a dozen or more different channels, each of which had to be bridged, and through this awful country artillery and hundreds of wagons were dragged with infinite labour, the men making roads with logs which constantly disappeared in the ooze and had to be re-made. To quote General Cox—"It was the indomitable will of 60,000 men, concentrated to do the inflexible purpose of one, which bridged this chaos for hundreds of miles."†

Sherman reached and occupied Columbia, the Capital of South Carolina, February 15th, 1865; and Charleston, the Cradle of the Rebellion, was occupied by the Federals under Admiral Dahlgren two days later; and on the 22nd Schofield, who had come down with his army after Hood's defeat at Nashville, took Wilmington. The Federal columns converged rapidly on Goldsboro', driving the Southern forces before them and defeating them in the Battles of Kinston, Avasboro', and Bentonville, after which the junction of the Federal forces took place at Goldsboro' on March 23rd. On April 10th Sherman began his march on Raleigh to cut off Lee's retreat on Lynchburg in Virginia. On the 11th news reached him that

End of the war. Lee had surrendered and that the war was virtually over. He arrived at Raleigh on the 13th, and there Johnston, his great opponent in the Atlanta Campaign, who had once more been given an army, surrendered to him. This lecture is but an outline sketch of the operations carried on in the Western Theatre of War. In my next lecture I will narrate the progress of events in the East from the first Battle of Bull Run to the close of the war.

DISCUSSION.

The Chairman, Sir Edwin Collen, in closing the proceedings said:—

YOUR EXCELLENCIES, LADIES, AND GENTLEMEN—

When I asked Colonel Rundall to undertake the great labour of preparing an outline of the American War of 1861-65, I felt I was lay-

* *The March to the Sea*, page 42. By Major-General J. D. Cox.

† *The March to the Sea*, page 172. By Major-General J. D. Cox.

ing a heavy burden upon him. Every student of military history knows what labour is involved in compressing, into a small compass, the accounts of those great conflicts in which the existence of nations and the lives of individuals are at stake. Not only is the work an arduous one, but there is always the difficulty of steering the middle course. On the one hand, you must avoid diffuseness, and must not be led away by the charms of all those dramatic incidents which make the tale of war so thrilling and exciting. On the other, you have to prevent the narrative becoming a mere dry detail of events. But in the present case the work is a thousandfold more difficult, because Colonel Rundall has had to compress not one campaign but many campaigns, and to deal with a thousand incidents of war.

I am sure you will agree with me that Colonel Rundall has succeeded admirably, and has given us a clear and brief military history of the great struggle between the North and South, so far as the present lecture has carried us.

I well remember in the early sixties how difficult it was to follow the incidents of the campaigns. Even after the war, when the smoke of battle had rolled away, and the vision was clearer, it was difficult to study the campaigns properly for the want of good books and maps. A few officers of our own army studied the subject,—like Colonel Fletcher, Colonel Charles Chesney, and my lamented friend, Sir George Chesney; but I have always felt that, as a body, we did not make ourselves sufficiently acquainted with that wonderful series of campaigns which we call the Civil War in America. There is indeed plenty of material now, but I doubt whether there is a single work which deals briefly and clearly with all the events of this long war.

Colonel Rundall, with great labour—labour, I know, extending over many months, has provided us with such a narrative, and our heartiest thanks are due to him.

In his next lecture Colonel Rundall will deal with the operations in the Eastern Theatre of War. I am sure we shall derive as much advantage from the second lecture as from that to which we have just listened, and on your behalf, ladies and gentlemen, I now express to Colonel Rundall our great appreciation of the work he has done and of the lecture he has just delivered."

2ND LECTURE.

(The Operations in the Eastern Theatre of War.)

Having described to you the course of the war in the West from its commencement to its close, I will now turn to the Eastern Theatre of War.

We left McClellan as Commander-in-Chief of the Armies of the North, re-organising the forces in the East and raising fresh troops after the disastrous First Battle of Manassas or Bull Run. I told you that, by the spring of 1862, he had organised a highly efficient army of 158,000 men known as the *Army of the Potomac*, in addition to which he had 55,000 men to garrison Washington and its defences, to watch the Valley of the Shenandoah, and to guard the Maryland Shore of the Potomac.

He proposed to strike directly at Richmond, the Confederate Capital.

He has been much blamed for delaying so long before taking the field after the Battle of Bull Run, but armies of the size the Federals employed cannot be called into existence, and made efficient in a few days. Still, had he possessed a capable and reliable Intelligence Department, he might have learned the fact that there were barely 50,000 Confederate troops at Centreville during many weeks of his delay, which he could have overwhelmed with the vastly superior force at his disposal.

The Confederates, meanwhile, blocked the navigation of the Potomac, and their advanced works were pushed to within sight of Washington; and the North grew impatient at McClellan's delay. He and President Lincoln were at variance regarding the plan of campaign. Lincoln, supported by several Generals, considered the wisest course to pursue would be to occupy a point south-west of Manassas. McClellan, under the erroneous impression that there were 115,000 Confederates at and near Manassas, held to the plan of moving *via* the Potomac and Rappahannock Rivers to Urbana, seizing West Point and advancing on Richmond before Edward Johnston's army could fall back and prevent him. The Confederates, however, suddenly evacuated Centreville on March 9th (1862). McClellan followed them and established himself at Fairfax Court House. This sudden move of the Southern troops decided McClellan to transport his army by water to Fort Monroe and march up the Peninsula formed by the York and James Rivers and attack Richmond. He could not move his troops up the James River itself, because the Confederate ram *Merrimac* prevented approach that way, and compelled a large number of Federal ships to watch her.

McClellan landed at Fort Monroe with about 58,000 men and 100 guns on April 2nd, 1862. For the defence of Washington 20,000 troops were left to occupy the chain of forts which surrounded that city forming a ceinture of some 33 miles. In planning his campaign in the Peninsula, McClellan had reckoned on the co-operation of the navy in his attack on Yorktown, and on the help of the 45,000 men under General McDowell. But the navy was not sent to his assistance, and McDowell's army was kept back on the plea that it was required to defend Washington. The retention of McDowell's army for this purpose was a grave error and quite unnecessary, and was practically the chief cause of the disastrous failure of McClellan's Peninsula Campaign. It was owing to Stonewall Jackson's vigorous campaign in the Shenandoah Valley that, spreading consternation and alarm through Washington, caused President Lincoln to withhold McDowell's force from taking part in the Peninsula Campaign. Before, therefore, proceeding further with McClellan's operations, this is the fitting place to describe that gem of a campaign known as Stonewall Jackson's Shenandoah Valley Campaign.

Glance for one moment at the map. You will see that Virginia is intersected by rivers flowing, more or less parallel to each other, down to the Atlantic, each of itself forming a strategical barrier against invaders from the North. In the west of Virginia you

The Valley of Virginia, or the Shenandoah Valley.

will see a mountainous region consisting of portions of the Alleghany chain; ridges running more or less parallel to each other, the valleys of which afforded to the Southern Army almost covered ways, sheltered avenues of approach, by which the Confederates could and did invade the North. Down these valleys ran the Shenandoah River, emptying its waters into the Potomac at Harper's Ferry. This river has two forks which join at Front Royal. The easternmost wall of this mountainous district is known as the Blue Ridge. Then come the Massanutten Mountains between which and the Blue Ridge flows the south fork of the Shenandoah. The north fork of that river flows between the Massanutten Mountains and the Great North Mountain. The Massanutten Mountains terminate at Front Royal and the north fork of the Shenandoah, running round their northernmost slopes, joins the south fork. Westward of the Great North Mountain lies another great ridge known as the Great North Shenandoah Mountain, then the Bull Pasture Mountain and its continuation, and then the main range of the Alleghanies.

The Valley of Virginia, or the Shenandoah Valley, was the most important of the valleys in this region. It continues north of the Potomac, but is there called the Cumberland Valley.

Beautiful to behold, and very fertile is the Shenandoah Valley, and from it the Southern Armies drew many of their supplies. The inhabitants, as a whole, became bitterly hostile to the North, and by the time the war was over its soil was drenched with blood, its homesteads were ruthlessly destroyed and burnt by the Northerners, and innumerable battles had been fought often two, three, or four times on the same ground, and its resources were laid waste.

From the constant defeats the North sustained there it gained the *soubriquet* of the Valley of Humiliation. It was the scene of constant manœuvring and fighting, and it was not until the Federals gained entire control of this valley that the problem of how to take Richmond was solved. The passes through the mountains are termed "gaps."

Stonewall Jackson was assigned to the command of the troops guarding this valley towards the end of 1861. He found on arrival that the Federals were in possession of that part of North-West Virginia which lies north of the Great Kanawha River and west of the Alleghanies. They had captured Romney and held it with 5,000 men. They had also occupied Bath, while the north bank of the Potomac was everywhere guarded by their troops. They had the use of the Baltimore and Ohio Rail-road and of the Chesapeake and Ohio Canal.

To turn the Federals out of these positions Jackson was given at first about 11,000 men, two or three thousand of whom were State Militia, poorly armed and without discipline or experience. Opposed to him and his 11,000 men were 38,000, some under Banks and some under Rosencrans.

On January 1st, 1862, Jackson set out in the direction of Bath with eight or nine thousand men and disconcerted all the plans the Federals had been making for a campaign against Winchester. Pushing on through awful weather, he took Bath, drove the Federals across the Potomac to Hancock, bombarded that place, and destroyed an immense quantity of stores, re-crossed the Potomac, marched on Romney, and, driving out the Federals, occupied it on January 14th. His men and officers had suffered the most appalling hardships during these two weeks; they did not know him yet; they had no confidence in their strangely reserved and almost fanatically religious leader, and they became seriously discontented and would advance no further. In two weeks he, with trifling loss to himself, had placed his enemy on the defensive just as they were about to undertake offensive operations against him, and had virtually expelled the Federals from his district. But, partly through wilful misrepresentations made by some of his officers, and partly from ignorance at Headquarters of his true value, the Secretary of War, without any reference to him, ordered his troops back to Winchester, with the result that he sent in his resignation, and the Federals re-occupied all the positions from which he had driven them.

It took some time for both North and South to realise that one great secret of success is to first carefully select the best man without partiality, favor, or affection, and then "trust him all in all or not at all."

It was only through the urgent appeals of his immediate superior, General Edward Johnston, a personal friend of his, that Jackson was induced to withdraw his resignation. From various causes he was

unable to move for some weeks, but he remained at Winchester carefully watching the advance of Banks, and doing what he could to impede it. His main object was to prevent any reinforcements from that part of the world going to McClellan. We shall see how, by a series of rapid and masterful movements, he sent his overwhelming and powerful foes time after time staggering and reeling back from the blows he dealt them with his little force, and not only kept reinforcements from McClellan, but caused McDowell's 45,000 men to be kept back from the Peninsula Campaign, thereby rendering it a complete and disastrous failure.

Of course he had to retire from Winchester, but the activity of Ashby, who commanded his cavalry, and the boldness with which he himself maintained a position long after many another man would have retired from it, impressed his adversaries with the conviction that his army was far larger than it really was. Jackson fell slowly back to Strasburg, but hearing, on March 22nd, that a large body of Federal troops had left Winchester and were marching towards Mannassas and Centreville, he hastened back with all speed to attack those left at Winchester in the hopes of compelling the re-call of these reinforcements for McClellan. With

First Battle of Kernstown.

barely 3,000 men and 290 cavalry he did not hesitate to attack 7,000 Federal infantry and 750 cavalry at Kernstown near Winchester. His dispositions were masterful, and victory would have rewarded him had not one of his subordinates unwarrantably abandoned an important position, thus causing his defeat. He fell back sullenly after his defeat, little knowing the tremendous results he had accomplished. The Federals could not but believe that he had huge reinforcements behind him. The

Results of Jackson's defeat.

boldness of his attack staggered and terrified them. Not only were the reinforcements for McClellan hurried back to Winchester, but Banks sent a fresh division down from his army; all the troops that could be found within reach were hurried to Winchester; the design of sending Banks to Centreville became impracticable, and 20,000 troops were deemed indispensable to guard the North from Jackson's 3,000 and his supposed reinforcements. Great excitement and alarm prevailed at Washington, and McDowell's corps of 45,000 men was kept back from the Peninsula Campaign to aid the 20,000 already at Washington in defending the Northern Capital from Jackson's anticipated invasion of the North.

Thus his bold attack with 3,000 men set 85,000 men on the alert and ruined the Federal Campaign in the Peninsula.

Could a victory have produced more victorious results than this defeat did?

Jackson retired some 40 miles south of Winchester to a place called Elk Run Valley, while the Federals under Banks advanced to Harrisonburg; and Milroy and Schenk (Federals) were pushing down with 6,000 men to effect a junction with Banks, and were slowly driving the Confederates under Johnson before them to Staunton.

Generals Ewell and Johnson had been ordered to co-operate with Jackson, so that he now had some 17,000 men at his disposal. Opposed to him were Banks with 19,000 men at Harrisonburg, Milroy and Schenk with 6,000, while 15,000 were being sent to these two Generals by Fremont, *i.e.*, some 40,000 men. He determined to

Battle of McDowell. strike at his enemies before they could concentrate. Leaving General Ewell with 8,000 men to cover his movements and mislead Banks in his immediate front, Jackson moved with 6,000 men to Port Republic, crossed the Blue Ridge, and in four days was at Staunton. Joining hands with Johnson and his 3,000 men at a place 7 miles west of Staunton, he moved on the 7th May to attack Milroy and Schenk, and on May 8th fought and defeated them at McDowell or Bull Pasture Mountain, and followed them up as they retired on Franklin. To prevent reinforcements reaching Schenk and Milroy from Banks, he sent cavalry to block the mountain roads by felling trees and other means—precautions which proved his salvation a few weeks later.

As he closed on to the rear of the retreating Federals on May 11th, the latter resorted to the expedient of setting fire to the forests.

The volumes of smoke soon hid everything from view in an impenetrable veil, and the pursuing army had to feel its way very cautiously, commanded by the Federals from every advantageous position, and only protected from ambushes by skirmishers. Jackson declared that this adroit expedient of setting fire to the forests entailed upon him all the disadvantages of a night-attack.

On the 12th May (1862), having driven the Federals on to their main body under Fremont, Jackson faced about and hastened back to attack Banks before he could be reinforced. The latter had meanwhile retired to Strasburg. Jackson, with Johnson's and his own troops, joined Ewell on May 21st, and with about 17,000 men marched against Banks, more than half of whose force had been sent to

Battle of Front Royal. Fredericksburg. He came across Banks' advanced posts on the 23rd and fought and won the Battle of Front Royal where the Northerners—though defeated—made a gallant fight of it. Banks hastily retreated towards Winchester, vigorously pursued by Jackson, who inflicted severe punishment on the retreating Federals at Middletown and Newton, came up with their main body on the 25th May, and fought and defeated them severely at the Battle of Winchester. Banks fled hastily northwards, Jackson still following after him. The pursuit was, however, delayed by Ashby's cavalry dispersing to pillage, and by one of Jackson's Generals wasting time over a point of military etiquette, and refusing to take an order except through what he considered the proper channel. The Federal Army was thus enabled to get away beyond the reach of successful pursuit, and eventually crossed to the north side of the Potomac. In 48 hours Jackson had driven the Federals between 50 and 60 miles from Front Royal and Strasburg to the Potomac; they crossed that river a disorganised mass of fugitives; hundreds of their wagons had been abandoned or burnt; an immense amount of stores of all kinds had fallen into Jackson's hands and

about 3,000 prisoners; they had lost a third of their force, while Jackson's loss during the entire expedition amounted to only 400 men. President Lincoln had thought all was safe, and had given orders for McDowell's 45,000 men to join McClellan in the Peninsula; for the second time McDowell was kept back, and a proclamation was issued calling for Volunteers to protect Washington, in response to which half a million of men offered themselves for that purpose within 24 hours of the issue of the proclamation. Jackson then made a threatening movement towards Maryland in the hopes of drawing off more of the Federals operating against Richmond; but it was only a threat, as he knew his foes were beginning to cut him off towards the rear. President Lincoln was gathering a force of between 55,000 and 60,000 men to overwhelm his little army which now only numbered 15,000 men. McDowell was ordered to send half his force to operate with Shields and Fremont on Jackson's rear, and the latter knew he could do no more than merely make a feint at invading Maryland. Jackson quietly watched McDowell, Shields, and Fremont converging on Front Royal in his rear, and saw, by May 30th, it was high time to desist from threatening Maryland, and so he retired on Winchester. Few men would have had the cool calculating audacity to wait as long as he did. The situation on the evening of the 30th was a grave one. Shields' advance was actually in possession of Front Royal, 12 miles from Strasburg. Jackson at Winchester was 18 miles from Strasburg, while Fremont was 20 miles off, and had telegraphed to President Lincoln that he would be there by 5 P.M. next day. Jackson's men had marched 25 miles that day to Winchester, and his rear, which had been skirmishing all day, was 43 miles from Strasburg. Once at Strasburg the combined Federal force, triple Jackson's strength, would bar his way, while 14,000 more were closing in behind him as he retired. He determined to be first at Strasburg and to pass swiftly between the armies gathering for his destruction; and he did it. Early on the 31st May his 2,300 Federal prisoners were sent on guarded; next came his long train of wagons and captured stores; then followed his little army with General Winder in command of the rear-guard, the whole of which marched 28 miles that day and some of it 35 miles. Jackson reached Strasburg that afternoon and camped there for the night, putting 30 miles between himself and Banks' pursuing force of 14,000 men.

He was now directly between Fremont and McDowell. They were advancing too cautiously, being misled by false rumours as to Jackson's strength. No attempt was made to hinder him or cut him off, and Fremont, instead of marching to Strasburg by 5 P.M., stopped short of that place. Next morning Jackson pushed on his prisoners and impedimenta while he waited for his rear-guard, and drove off a feeble attack of Fremont's. McDowell and Shields were utterly bewildered by the celerity of Jackson's movements, and he went on unmolested, having given them all the slip. As he retired, he burnt all the bridges across the Shenandoah River, and thus prevented McDowell and Shields from effecting a junction with Fremont. He retired as far as Port Republic, gave his men two days' rest, and then determined to fight his foes in detail. Selecting a strong position

at a place called Cross Keys, he awaited Fremont's attack which was made on June 9th. Fremont was defeated by

Battle of Cross Keys. Ewell, whom Jackson had placed in command, at Cross Keys. The next day he formed the bold purpose of attacking both Shields and Fremont, and fought what is known as the **Battle of Port Republic.**

Battle of Port Republic. Through over-impatience on Jackson's part the fight began too soon as far as his army was concerned, and at first he was on the verge of being badly defeated; but the indomitable pluck of his men, and the gradual concentration of his columns, finally snatched victory from defeat, and the Federals, by the end of the day, were in full retreat. It was Shields whom Jackson defeated that day. Fremont tried to come to his assistance, but the only remaining bridge was the one by which Jackson had crossed to attack Shields, and Fremont could not pass over the swollen river. Next day both he and Shields retired northward, Jackson pursuing. The Battles of Cross Keys and Port Republic closed this campaign which had lasted just 3 months, and had been most disastrous to the Federals. Jackson, having thus disposed of his enemies and effected the permanent withdrawal of the greater part of McDowell's army from the operations in the Peninsula, hastened with most of his own army to take part in the defence of Richmond. He left a small force behind him in the valley, and the Federals for some time believed he was still there in great force until they suddenly found him taking part in the great conflicts which raged round Richmond.

I will now return to McClellan whom we left at Fort Monroe **The Peninsula Campaign.** in the Peninsula. Hampered by mistrust and unfriendliness at Washington, deprived of the services of McDowell's 45,000 men and of the navy, both of which he had reckoned on, lacking in a great measure energy and boldness of execution in the field, and utterly misled by an extraordinarily inaccurate map of the district,* it is hardly surprising that the Peninsula Campaign was a disastrous failure.

The Confederates, opposed to him, had a strong position—one flank resting on a fortified town (Yorktown), the other protected by gunboats on the James River, while their front was covered by a marsh, a river, and in large part by earthworks.

He commenced his forward movement on April 4th (1862), but was stopped by coming across the enemy unexpectedly on the Warwick River. His troops were worsted in the affair of Big Bethel. He then pushed slowly on to Yorktown, and commenced a regular siege of the place, which suited his enemy well, who, in order to gain time, kept him delaying at Yorktown for a month and then quietly evacuated it. On the 20th April McClellan received some reinforcements after many appeals and representations.

* This map is known as the "Cram" map from the name of the topographer who drew it, Colonel Cram. Through the courtesy of the American War Office I have a copy of this map; it is a master-piece of dangerous inaccuracy.—F. M. R.

When the Confederates retired from Yorktown, he sent four of his **Battle of Williamsburg** Generals* in pursuit. They came across the enemy strongly posted in a line of forts and earthworks at Williamsburg. Heavy fighting ensued; but there was no concerted action between McClellan's Generals, or they might have gained an important victory. The Confederates certainly retired but with a loss of only 1,500 men to the Federals over 2,000 and 5 guns.

After this it was not till May 21st that McClellan concentrated his army, now about 80,000 strong, some 12 miles from Richmond, on a line extending from the Pamunkey River to the Chickahominy.

The Confederates had some 12,000 at Fredericksburg and **Battle of Hanover Court House** north of Richmond, and McClellan sent a force under General Porter which attacked and defeated them on the 27th.

He then advanced on Richmond, but was heavily repulsed in the **Battle of Fair Oaks and Seven Pines** on May 31st. After this, owing to stress of weather and the destruction of the bridges connecting his wings, McClellan was unable to do anything of importance for two or three weeks, while

Stuart's Raid. Stuart, the famous Confederate cavalry leader, made one of his successful raids clean round the Federal Army. Then on June 26th McClellan began his famous **The Seven Days' Battle.** "change of base" to the James River, as some term it; others call it a "retirement"; others again "one of the ablest flank movements ever made in war." Whatever it is called, it was a movement most ably conducted in the face of a vigilant and untiring foe, who for seven days fiercely attacked him, and never left him alone day or night.

This *Seven Days' Battle* included the actions of Mechanicsville, Gaines Mill, Savage's Station, Peach Orchard, White Oak Swamp, and Malvern Hill where McClellan's army made so vigorous a stand that the Confederates were completely and finally beaten off. It was only owing to the perfect organization which the *Army of the Potomac* owed entirely to McClellan that it was not annihilated or at least demoralised. But it was neither demoralised nor annihilated; beaten and unsuccessful, it is true, but that was owing very largely to ill-luck as regards weather, grossly and persistently false information, and unfriendliness and opposition and backbiting at Army Headquarters. McClellan was deprived of his appointment as Commander-in-Chief, and General Halleck, whom you remember from my first lecture had been commanding in Kentucky and Tennessee, succeeded him. The base of the *Army of the Potomac* in the Peninsula was now Harrison's Landing on the James River. On August 6th the troops were removed thence by sea to Aquia Creek for the campaign under Pope. Thus ended the first advance of the Federals on Richmond.

* Generals Sumner, Hooker, Heintzelman, and Keyes.—F. M. R.

The Federal Government now deemed it of the first importance to hold strongly the line of communication above Fredericksburg and north of the Rappahannock, in order to prevent the Confederate Army, nearly all of which was by this time concentrated under Lee at Richmond, from falling on the *Army of the Potomac* during its removal from the Peninsula. General Pope (of

Pope's Virginia Campaign. New Madrid and Island No. 10 fame) had been called from the West to command the *Army of the Potomac*. The Federal forces in Virginia had been greatly scattered owing to the Peninsula and Shenandoah Valley campaigns and other minor affairs, and Pope, in July 1862, immediately began to concentrate them. Stonewall Jackson, who had been fighting in the Peninsula, was sent by Lee from Richmond with 25,000 men to oppose Pope.

To draw off the attention of the Confederate Army at Richmond from McClellan's army during its removal to Aquia Creek, Pope, on August 9th, ordered Banks and Sigel to move to Culpeper Court House; but Jackson met and defeated them at the Battle of Cedar Mountain. He then on the

11th retired to a position on the Rapidan, whereupon the Federals, reinforced by Pope, followed him and took up a line of observation which extended to the base of the Blue Ridge. Both sides were soon heavily reinforced, and Pope, finding his rear threatened, retired behind the Rappahannock. Lee himself now commanded the operations against Pope. Some heavy skirmishing took place till August 25th—notably at Waterloo Bridge, Lee Springs, Freeman's Ford, and Sulphur Springs. On the 25th Lee sent Stonewall Jackson with 25,000 men to make a rapid flank march round the Federal right, get in their rear, and cut their rail-road communications. It was a daring move and so dangerous that he narrowly missed defeat.

The Federals perceived the move, but could not conceive its object. To them it appeared that Jackson was heading straight for the Shenandoah Valley. Undoubtedly Pope should now have fallen back on a new line stretching from Mannassas in the direction of Front Royal, up towards a pass called Thoroughfare Gap; but he made the mistake of trusting to the Washington authorities to preserve his line of supplies, and he remained manœuvring on the Rappahannock, simply requesting Halleck, the Commander-in-Chief, to send a force to Gainesville in his rear.

Starting on the 25th, Jackson succeeded by the next evening in Jackson's great flank getting 15 miles in rear of Pope's army, and march. without their being aware of it. During the night of the 26th Pope received intelligence that Confederate cavalry had interrupted the rail-road at Mannassas. He then decided to send the main body of his army to Gainesville. Jackson captured Mannassas Junction on the night of August 26th, securing a large amount of valuable supplies. But his was more than a mere raid on supplies. It was an operation intended to demoralise the Federal troops and create confusion of which he and Lee might take advantage. He was now completely isolated from Lee, and had

to select the most advantageous ground on which to defend himself. He decided to make for the old battle field of Mannassas or Bull Run, where he had gathered his first laurels and won his nickname of Stonewall. On August 27th he fought and won the action of Bull Run Bridge. Pope had sent nearly the whole of his army to chase Jackson, but he was a person whose movements were puzzling. Many delays and mistakes occurred, and it was not till the 28th that the Federal troops got anywhere near his position at Mannassas; and then were fought on the 28th and 29th the bloody Battles of Groveton and Gainesville which may be termed drawn fights; they are described as the most terrific conflicts that can be conceived, and ended by both sides slowly falling back, the Northerners claiming a victory. Longstreet, sent up by Lee, succeeded in effecting a junction with Jackson in time for the second day's fighting. Pope, under the impression he had won a victory, ordered Jackson to be pursued, with the result that he came upon Jackson and Longstreet strongly posted in the position, the former had previously selected; and then, on August 30th, was fought the Second Battle of Bull Run or Mannassas, in which the Federals were for the second time severely defeated, though they out-numbered Jackson and Longstreet by about 15,000 men. They retreated, however, in good order to Centreville where they were reinforced by 20,000 men which had arrived from McClellan's old Peninsula Army. But during their retreat the ever energetic Jackson followed them up, overtook them, and, without waiting for Longstreet's co-operation, attacked them and fought the Battle of Chantilly on September 1st. Neither side gained any particular advantage, but the Confederates were now close to Washington where, in consequence, the greatest alarm and terror prevailed. On September 2nd Pope's army was ordered by the Federal Government to withdraw within the lines round Washington, and he was deprived of his command, and greatly blamed for this campaign. We have no time to discuss the question in detail, but it appears that, but for the hesitation of General Halleck, the Commander-in-Chief, strong reinforcements from McClellan's Peninsula Army, part of which was at Alexandria on the 26th, might have been sent forward in time to turn the scale at the Second Battle of Bull Run.

Battle of Bull Run Bridge.

Battles of Groveton and Gainesville.

Second Battle of Mannassas or Bull Run.

Battle of Chantilly.

On Pope being deprived of his command, McClellan succeeded him, the force in the field taking its old name of the *Army of the Potomac*.

On September 3rd the Confederates, some 40,000 or 50,000 strong, marched towards Leesburg with the intention of invading Maryland. On the 7th McClellan marched from Washington to oppose them with about 85,000 men.* He had to advance cautiously, for he did not know whether the Confederates were merely endeavouring to

Lee's invasion of Maryland.

* *The Antietam and Fredericksburg*, page 7. General F. W. Palfrey.

draw him away from Washington, or were really invading Maryland; or, if so, whether they were going to turn Washington, or move on Baltimore, or invade Pennsylvania. He therefore advanced so as to cover Washington and Baltimore, and at the same time kept his troops in hand so as to either hurry back to Washington or move on Pennsylvania. It was Lee's intention to invade Maryland.* Between September 4th and 7th (1862) he crossed the Potomac by a ford near Leesburg, and encamped in the vicinity of Fredericks. There were at that time 2,500 Federals at Martinsburg and 9,000 at Harper's Ferry. These were of course cut off by Lee's manœuvre, and he expected them to retire. They, however, did not do so, and he accordingly ordered troops to be sent to dislodge them. This order fell into McClellan's hands, and the Confederate Army was at his mercy, for the despatch containing the order disclosed to him, firstly, that Lee had divided his army by sending Jackson and Walker back across the Potomac to capture Harper's Ferry and Martinsburg; and, secondly, it gave him details of the contemplated movements, objectives, and even halts of the rest of the Confederate Army. But McClellan lacked the energy to profit by this piece of rare good fortune. On the 11th Jackson crossed the Potomac, and the Federals evacuated Martinsburg and retreated to Harper's Ferry. The ground about Harper's Ferry is commanding, but Jackson, by some skilful manœuvring and an hour or two's fighting on the 15th September (1862), took the place, and 11,000 Federals with 73 guns surrendered to him. He then moved at once to rejoin Lee and arrived in time to take part in the Battle of the Antietam. McClellan had let his opportunity go by; he had failed to relieve Harper's Ferry, and had not struck at the Confederate Army while its wings were separated. His successes, therefore, in Maryland were moderate only, instead of being decisive. He now advanced and met and defeated his enemy at the Battle of South Mountain on

Battle of South Mountain.

Battle of Antietam.

September 14th. On the 17th was fought the bloody Battle of the Antietam (so called after a creek of that name), a fiercely contested but indecisive engagement in which the Confederates maintained their position, though they numbered only 40,000 to McClellan's 90,000. The carnage was fearful; the Northern Army losing 12,469 killed, wounded, and missing, and the Confederates, approximately, 25,000.† Twenty-four hours after the battle the Confederates retired across the Potomac, and the invasion of Maryland was at an end. The Federals tried to follow up the retiring Confederates, but were driven back with considerable loss.

For some seven weeks after the Battle of the Antietam nothing of any very great importance occurred that I have time to dwell on. Lee withdrew to the neighbourhood of Winchester and Bunker

* Lee's Report, dated March 6th, 1863, Volume I. Reports of the Operations of the Army of Northern Virginia, Richmond, 1864.

† *Statistical Record*, page 214. By Frederick Phisterer. But Captain Chesney estimates the Confederate loss at only 9,000, Volume I, *Review of Recent Campaigns in Virginia*, page 137.

Hill, and McClellan devoted himself to guarding the line of the Potomac. It was during this delay that Stuart's Raid. again made one of his famous, dashing cavalry raids; he crossed the Potomac and made the entire circuit of the Federal Army in their own territory, occupied Chambersburg for a time, destroyed much property, and ascertained the position and designs of the enemy, without suffering any material loss himself.

At last McClellan summoned up sufficient energy to cross the Potomac between October 26th and November 2nd (1862); but so dissatisfied with him were the authorities at Washington that he was again deprived of his command. On November 7th Burnside succeeded him in the command of the *Army of the Potomac*. Burnside's plan of campaign was to make a rapid move on Fredericksburg with a view to advancing thence on Richmond. He had at his disposal 127,574 officers and men, divided into three grand divisions under Sumner, Hooker, and Franklin.

By November 17th Sumner was at Falmouth and could have crossed his troops over the Rappahannock in small bodies, but Burnside was afraid to sanction this. Thus disastrous delay occurred which gave Lee time to concentrate and frustrate his designs. In a short time the latter had 78,000 men strongly entrenched on the heights in rear of Fredericksburg, and Burnside's decision to wait for pontoons now compelled him to solve the problem of how to cross the Rappahannock in the face of a vigilant and formidable foe, when he might have crossed it with safety a few days before while there was only a small garrison to deal with. Burnside now proceeded to prove himself utterly incapable. He issued ill-defined orders for throwing bridges across the river; he apparently did not realise that bridges for the passage of 100,000 men and artillery have to be somewhat carefully constructed; the fact appears to have escaped his notice that 78,000 men are not likely to allow such bridges to be made without vigorous opposition. His indecision and helplessness are very pitiful to read of; and it is melancholy to read of how his magnificent army, splendidly led by their officers, tried and did all that brave men could do to counteract the incapableness of their General.

Battle of Fredericksburg. His "insane attempt upon the heights of Fredericksburg"* took place on December 13th.

Six times did his gallant army attempt to carry those wooded slopes and successive crests, advancing against a strong force of first rate troops who were covered by breastworks and rifle pits, with guns protected by earthworks disposed so as to give both front and enfilading fire. Six times, undaunted by the obvious fact that they were asked to do an impossible thing, did they push on with a splendid courage to within a hundred yards of the foot of the hill.† Small wonder that at last they were thrown into dire confusion and retreated. The Federals lost in this Battle of Fredericksburg some 13,000 men, while the Confederates appear to have lost only

* *The Antietam and Fredericksburg*, page 165. By General F. W. Palfrey.

† *The Antietam and Fredericksburg*, page 172. By General F. W. Palfrey.

about 5,000. Two days after the battle the former re-crossed the Rappahannock, and Burnside was deprived of his command, Hooker succeeding him.

The *Army of the Potomac* now numbered 124,500, of which 11,500 were cavalry. The Southern Army consisted of some 62,000 men, of which 3,000 were cavalry.

Hooker's plan of campaign was to make a feint of crossing three corps under Sedgwick over the Rappahannock below Fredericksburg, while the remaining 4 corps under Slocum were to make a detour and cross some 27 miles higher up and march down on the Confederate left flank.

The War in 1863.

For various reasons Hooker did not commence his campaign till April 1863. Slocum crossed the Rappahannock on April 29th and reached Chancellorsville with but little opposition, as Lee had not expected a move in that direction. Stuart's cavalry was guarding the Confederate left flank, and when he became aware of Slocum's intention, he started with a small escort to warn Lee. It was night, and on the way he came across a detachment of 200 Federal cavalry. He sent back for his cavalry brigade, and when this arrived, there ensued in the moonlight a fierce cavalry fight, with charges and counter-charges and hand-to-hand combats. The Federal cavalry, though surrounded by Stuart, managed to cut their way out. On the 30th April Hooker's three corps under Sedgwick crossed the river below Fredericksburg and began their march on Chancellorsville. Lee, after directing Jackson, who was on his right, to join him, moved with his main body to meet Hooker. The country is covered with a mass of dense undergrowth and thickets and is known by the name of the Wilderness. Hooker's army, trying to force its way through it, had its formation completely broken up until it resembled a vast mob. Lee, taking advantage of injudicious delays on Hooker's part, brought up his whole army, except a few troops left to hold the Fredericksburg heights. On the 1st May the two armies met

ville. about 2½ miles from Chancellorsville, and from May 1st to 4th there raged a terrific battle which went on almost unintermittently all day and all night. The first day Hooker's army was driven back and took up a strong position, the Confederates following them up and shelling them at night. Hooker's position was so strong that it was practically unassailable in its front and on its left. But the right was under Howard, whose utter carelessness and inattention to orders left it unguarded and weak. The Confederate cavalry soon found out this weak spot, and Lee decided on a daring manœuvre which was suggested by Jackson. It was that he, Jackson, should take his own corps of 26,000 men, make a detour through the woods, and strike the right flank of the Federal Army perpendicularly, and so roll up the whole of their line. It was a startling proposition and contrary to all the principles of strategy. Lee's army was numerically far inferior to Hooker's. To cut it in half in a dense jungle, where neither part could help the other

meant that Lee's portion would have to stand the brunt of Hooker's entire army probably, and might be driven back to Fredericksburg or crushed, while Jackson was endeavouring to turn the enemy's right flank. Nothing short of utter incompetence and blindness on the part of the Federal Commanders could make such a manœuvre successful.* However, it was carried out and successfully too. As soon as Jackson had started, Lee made a bold attack on the Federal's left and centre. The very boldness of this demonstration made Hooker think he was attacked by a great force and drew off attention from his right. As a matter of fact, Jackson's movement was discovered, and some measures to stop him were taken ; but they were not carried out with any thoroughness, and Howard utterly refused to believe in the possibility of an attack on the right, and did nothing to protect himself. At 6 P.M. (May 2nd) Jackson delivered his assault on the Federal right. By this time 6 miles of pathless forest lay between him and Lee. Having reconnoitred he formed for attack. The first notice the Federals had of his approach was, not from pickets, but from the deer and rabbits which suddenly dashed towards them. Then came the fierce rush of Jackson's men, while at the same moment Lee made a thunderous onslaught on the Federal centre and left. Howard's men, who were playing cards and lounging about with their arms piled, fled in wild confusion, streaming to the rear past Hooker's headquarters.

Devens' (Federal) division was flung back in wild confusion on Schurz's (Federal) division, and the two together were hurled on to the next division under Steinwehr. A brigade of Steinwehr's had just time to get into a weak entrenchment, and, with the help of some artillery, managed to check Jackson's men (who by this time must have been considerably out of breath) some three quarters of an hour. Howard then began to exert himself to rally the fugitives, but Jackson's men swept round his flanks, took his line in reverse, and carried his position with a rush. The terrific uproar and the wild rush of fugitives told Hooker what had occurred, His staff charged on the flying crowd, but failed to stop them, and it became evident that a total rout of the whole Federal Army would be inevitable unless a fresh line could speedily be formed, for Jackson was sweeping everything before him. Berry's division was ordered to form this line. Meanwhile General Warren had succeeded in stopping some batteries and forming them up behind the infantry, and Pleasanton (Federal) came upon the scene with some of his cavalry and guns. He saw there was no time to load and lay the guns, and that time must be got somehow. He therefore ordered Major Peter Keenan, Commanding the 8th Pennsylvania cavalry, to charge the ten thousand victorious and charging enemy in his

The charge of the 400. front with his 400 men, and so gain a few moments for loading the guns. Major Peter Keenan, whose name should be enrolled in the list of the world's heroes, replied simply "General, I will do it," and forthwith started with his little band of heroes, on his death ride, into the seething mass of Confederates,

* *Chancellorsville and Gettysburg*, pages 20-21. By General A. Doubleday.

and was literally impaled on their bayonets. Needless to say, very few of that noble four hundred returned from that wild ride, but the short interval thus gained was priceless ; a space was cleared, and 22 guns, loaded with double canister, were brought to bear upon the Confederates, and were discharged into their masses at 300 yards. They seemed to be fairly blown back by the discharge into the woods whence they had just emerged, while their artillery, which had just come up, was almost annihilated by the battery on the plank road.* This gave time to re-load the guns. The Confederates rallied and opened a furious fire from the woods on the guns and on Berry's division, and then charged twice almost up to the muzzles of the guns, only to be again beaten back ; and then more Federal troops arrived on the scene. It was now 9 P.M. and in the darkness the Confederate troops got into inextricable confusion, and were halted on the edge of the woods and ordered to reform. Meanwhile Jackson went out with his staff

Death of Stonewall to reconnoitre. On his return his own picquets, Jackson, in the darkness, fired on him, thinking he and his party were a body of Federal cavalry. Nearly all his party were killed or wounded, and he himself was struck by three bullets, and both his arms were fractured. His horse too bolted with him towards the Federal Army. He managed to turn him and ride back, but he died on the 10th May. Thus perished one of the noblest and ablest soldiers the world has ever seen. By his death the Confederates suffered a loss that could not ever be made good. Time does not admit of entering into further details of this tremendous battle. Fighting went on all that night and all next day, and the Federals were driven back. That portion of their army, which had been detailed to attack the Fredericksburg heights, succeeded in driving out the Confederates owing to their preponderating numbers. Next day, however, the Confederates retook these heights, and Hooker's great army was finally forced back across the Rappahannock, leaving all their killed and wounded behind them and 20,000 stand of arms.†

After this no further military movements of any great importance took place for several weeks.

Lee then determined on a move to invade the North, hoping to draw out Hooker and strike at him decisively. Lee again invades the North.

Moreover, the Confederates believed that, if they won a decided success in the North, England would side with them and help them with a fleet, and that all Europe would insist on the North acknowledging the supremacy of the South.‡

The Federals, in order to prevent Lee's invasion, crossed the Rappahannock on June 9th and attacked the Confederates at a place called Brandy Station and were repulsed. Lee then decided to carry out his invading movement by way of the Shenandoah Valley, screened by its mountains. Accordingly, on June 10th, he sent Ewell's corps to clear the valley of the Federal troops who were at Winchester

* *Chancellorsville and Gettysburg*, pages 37-38. By General A. Doubleday.

† The Federal loss at Chancellorsville was 16,030 and that of the Confederates 12,281. *Statistical Record*, page 215. By Frederick Phisterer.

‡ *Chancellorsville and Gettysburg*, pages 76-77. By General A. Doubleday.

under Milroy. This Ewell accomplished on the 14th and 15th after severe fighting, in which Milroy suffered a disastrous defeat. The whole Confederate Army then moved northwards. Hooker (the Federal General) then disposed his army on the line of Centreville, Mannassas, and Warrenton, but would not advance out into the open and give battle as Lee had hoped. The Federal Government at Washington made a counter-move to Lee's by sending a force to the Peninsula and threatening Richmond which was now but weakly garrisoned. This counter-move almost caused the recall of Lee to Richmond, but by dint of calling out the Militia and weakening the garrisons in North Carolina and elsewhere by withdrawing troops from them, enough men were concentrated for the defence of Richmond.

As Lee advanced northwards, many minor actions were fought, but Hooker would not engage his army as a whole. He, however, prevented the Confederates from getting Harper's Ferry and Loudon county, but on June 27th they crossed the Potomac higher up and proceeded up the Cumberland Valley. Hooker and his army then crossed the river and moved on a line parallel to the Confederates on the east side of South Mountains. Lee was in ignorance of this movement, as he had allowed Stuart to make one of his famous cavalry raids round the Federal Army, which on this occasion was of little use, and deprived him of his chief means of gaining intelligence. He was therefore startled to hear on the 28th that the Federal Army was at Frederick instead of south of the Potomac as he had supposed. Just at this time Hooker, considering himself thwarted in his plans by the Washington authorities, resigned his command, and General Meade succeeded him.

Lee now perceived his communications with Richmond were in great danger, and ordered a concentration of his army at Gettysburg, part of which had pushed as far north as the Susquehanna and Harrisburg in Pennsylvania. The two armies now fought the bloodiest battle in the whole war, the losses in which were far heavier than in any other engagement, the Federals losing 23,185 killed, wounded, and missing; the Confederates 31,621.* This terrible conflict raged for three days—July 1st, 2nd, 3rd. The Federal force numbered 82,000 men and 300 guns; that of the Confederates 73,500 and 190 guns; the Federal cavalry are estimated at about 11,000 with 27 guns; the Confederate cavalry the same, but with only 16 guns.†

The Battle of Gettysburg was one which the Confederates might have won had not Lee committed the fatal error of trying to surround his enemy's large force instead of concentrating and striking at one given spot. It is all very well to surround a small force with a very much larger one; but in trying to surround 82,000 men with 73,000, Lee had to extend his lines some miles, and that in a country where

* *Statistical Record*, page 215. By Frederick Phisterer.

† *Chancellorsville and Gettysburg*, page 123. By General A. Doubleday.

it was very difficult to move troops from one part of the line to reinforce another part, while an army larger than his own, and of just as good fighting material, was concentrated by his manœuvre, and able easily to bring a preponderating force to bear against any spot in his line that they pleased. Lee had the Federal Army in his power the first day, and a victory would probably have meant the end of the war; but by his ill-advised attempt to surround his enemy he was defeated. It was a battle in which we read of terrific and obstinate fighting; of magnificent courage displayed on both sides, not by individuals alone, but by regiments, divisions, corps; of grand infantry charges on large scales driven home, till both sides are engaged in the fiercest of hand-to-hand fighting, muskets clubbed, and even colour staves being used for weapons. We read of 16 cavalymen charging thousands of infantry and of General Officers and their staffs charging into the mêlée as individuals. The credit of repulsing Lee's furious onslaughts can hardly be given to General Meade. It belongs more properly to his subordinate Generals, and especially to the grand courage of his soldiers. Meade's display of incompetence during those three days is crowned by the folly he showed in not delivering a counter-attack when Lee's grand and final attack was repulsed.

There were troops ready on the spot for such service, and a counter-charge at that moment would have gone near annihilating the Confederate Army. In fact, Lee expected such a charge and was doing the best he could to meet it, but it was not delivered. The Confederates were allowed to retreat at their leisure, and it was not till the second day after the battle, July 5th, that the Federals really followed them up, and even then Meade begged his Generals to do nothing that might bring on a general engagement. Now, too, was the time for Meade to cut Lee off entirely from his communications with Richmond. A force could have been sent to prevent Lee crossing the Potomac, as Meade had been strongly reinforced; but he delayed and shilly shalled, and finally adopted a route twice as long as that taken by the Confederates. By the night of the 14th Lee and his army got clean away back into Virginia, and, retiring slowly up the Shenandoah Valley, driving off successfully all attacks on its rear, it finally reached the south bank of the Rappahannock once more, and then took up a line on the Rapidan. Meade, with his Federal Army, on the line of the Rappahannock and Alexandria as his base of operations, confronted him. But, beyond operations undertaken by the restless and energetic cavalry leaders on both sides, nothing of any very great importance occurred.

In October 1863 Lee once more put his army in motion with the object of turning and attacking Meade's right flank. Meade perceiving this withdrew to the Rappahannock to lines which had been carefully entrenched. On October 13th Lee forced the passage of the Rappahannock while Meade was retiring on his fortified lines at Alexandria. On the 14th portions of both armies came in contact near Bristoe Station, where the Southerners suffered a reverse. Lee, seeing he could not draw Meade out into the open, was compelled to retire, as the country round about was so devastated by the war

that no supplies could be obtained, and the distance from his depôts rendered the transport of supplies very difficult. He therefore retreated to his old lines on the Rappahannock, his cavalry covering his retreat in fine style, and inflicting a severe defeat on the Federal cavalry. Nothing of importance occurred till the first week in November, when Meade advanced with the intention of driving Lee from his line on the Rappahannock. Sharp fighting occurred on the 7th November at a place called Kelly's Ford and at Rappahannock Station, with such disastrous results to the Confederates that Lee had to retreat behind the Rapidan. He was not followed up till November 26th, when the Federal Army, advancing to drive him further back, plunged for the second time into the dense jungle and maze of swamps in the Wilderness. Lee forthwith concentrated his army in a strong defensive position on a stream known as Mine Run which runs into the Rapidan. After some preliminary skirmishing Meade determined to try and turn the right of the Confederate position on November 30th; but it was found to be so strong that the Federal Commander felt that, even if he did obtain a victory, it would be too costly; so on December 1st and 2nd he retired across the Rapidan to his former lines. It was a timely withdrawal from a dangerous position,* nevertheless Meade incurred great blame and opprobrium. This event closed the operations of the *Army of the Potomac* for the year 1863.

In Western Virginia,—the space lying between the Eastern and Western Theatres of War,—the Federal cavalry under Averill made a successful raid, and then destroyed the rail-road from Richmond to Lynchburg. This rail-road runs thence to Knoxville and Chattanooga. The Chattanooga end of this important line was, as we have seen, already in the hands of the Federals, but the portion now destroyed by Averill was of great use to the Southern General Longstreet, who was with difficulty maintaining his position in Tennessee. Some idea of the task which Averill and his cavalry set themselves to perform may perhaps be gathered from the following extract from his report :—

My march was retarded occasionally by the tempest in the mountain and the icy roads. I was obliged to swim my command, and drag my artillery with ropes across Craig's Creek, seven times in twenty-four hours.

The Confederates were massing in his rear, but he accomplished his task, seized the bridges over the Jackson River, and escaped with but little loss by a mountain path believed till then to be impracticable.

The War in 1864.

Before describing the struggle between North and South in this year, it would not be out of place to glance at the numbers engaged on both sides. The aggregate Northern or Federal force, available

* *History of the American War*, Volume III, page 125. By Lieutenant-Colonel Fletcher, Scots Fusilier Guards.

for duty on May 1st, 1864, was 662,345. This was distributed over the two Theatres of War. That of the Southern or Confederate force was about 222,000 men ; that is, about 440,000 less than their opponents ; truly, an enormous disparity.* Of the above forces, we find the Federals bringing into the field for the campaign against Richmond 159,785 men and 404 guns ; to oppose which Lee had some 87,000.† When we contemplate these figures and remember the North could and did obtain more men, while the resources of the South as regards recruits were well nigh exhausted, we cannot be surprised at the ultimate defeat of the latter ; we are only filled with admiration at the magnificent fight she made against such heavy odds and at the almost matchless skill of Lee who controlled, guided, and directed her heroic struggles in the field.

General Grant, as stated in my first lecture, had been called from the West to succeed General Halleck as Commander-in-Chief of the Federal Armies. He assumed his new duties on March 9th, 1864, and, on opening his Virginian Campaign, directed Sigel to operate in the Shenandoah Valley, and break up the remaining important rail-roads by which Richmond communicated with the West ; and create a diversion so as to draw off troops from opposing his march on Richmond.

After some minor engagements Sigel was badly defeated by the Confederates under Breckenridge at New Market on May 14th (1864), and was deprived of his command, General Hunter succeeding him. Making Lynchburg his objective, Hunter marched up the valley, and met and defeated the Confederates at

Battle of Piedmont. Piedmont (June 5th, 1864) and destroyed an immense amount of stores and property at

* *History of the American War*, footnotes to pages 196-202, Volume III. By Lieutenant-Colonel Fletcher, who quotes from the Report of the Secretary of War, Washington, dated November 22nd, 1865.—F. M. R.

† *The Virginian Campaign of 1864 and 1865*. By General A. Humphreys, pages 14, 17, 137, 141, 142 and 434 (last line but one). The details are as follows :—

Federals.			
Army of the Potomac	...	99,438	274 guns.
Ninth Corps	...	21,740	42 " "
Army of the James	...	38,607	88 " "
Total	...	159,785	404 " "
Confederates.			
Army of Northern Virginia	...	61,953	224 guns.
Garrison of Richmond and its defences	...	6,000	
Garrison of Petersburg and in North Carolina	...	19,000	
Total	...	86,953	

Lieutenant-Colonel Fletcher in his *History of the American War*, Volume III, pages 200-201, calculates the Federal forces acting directly and indirectly in the campaign against Richmond in 1864 as 284,630 (294,630 P), and computes the total of Lee's forces at 81,000. The numbers of the Confederates are only approximate, as their returns are incomplete, but I am inclined to think 87,000 is well above the actual numbers available for duty.—F. M. R.

Staunton. On June 17th he captured the out-works of Lynchburg near Quaker Church, but failed to take the place itself, as its garrison had been strongly reinforced from Lee's army by troops under Early and Breckenridge. Hunter had to retire, and, owing to strategical faults committed by him in his advance on Lynchburg, he was compelled to retire by Buford's Gap to a place called Charleston in the Kanawha Valley. His mistakes had enabled the Confederates to cut off his supplies; and his army, as it retreated, was nearly starved. Meantime Sheridan had arrived from Grant's army to co-operate with him. But Sheridan was too late, and though he defeated the Confederates at Trevillian, he was himself driven back in an action fought the next day near Gordonsville and Louisa Court House. Early then

Early's invasion of the North.

promptly marched down the valley, up to the Potomac, crossed it, and invaded Maryland and menaced Washington in order to draw off some of the army under Grant who was pressing Lee. This unexpected and bold move filled the Federal Government with dismay, and troops were hurried forward under Wallace to stop him. But he

Battle of the Monocacy.

attacked and defeated Wallace on the Monocacy River (July 9th) and marched straight on Washington. The defences of the Federal Capital were so formidable that it was impossible for Early with his small force* to reduce them. So he contented himself with a sharp skirmish near Fort Stevens, which was witnessed by Abraham Lincoln and many ladies and gentlemen, and then he retired and re-crossed the Potomac. He had accomplished his object, for troops were sent off by Grant to defend Washington, and his audacious advance had filled the North with terror and alarm. The Federal pursuit of Early, as he retired, was not properly pressed, and he got back into the Shenandoah Valley again with most of the spoils he had captured during his advance. At a place called

Battle of Snicker's Gap.

Snicker's Gap he turned on his pursuers and inflicted on them a sharp defeat (July 18th), and then continued his retirement on Strasburg.

Meanwhile Hunter's troops, which I told you had been driven from Lynchburg up into the Kanawha Valley, now began arriving on the scene by rail at Harper's Ferry. Part of them under Averill threatened Early's retiring force, so he sent back

Ramseur to check Averill's advance. At the Battle of Carter's Farm. Battle of Carter's Farm near Winchester the

Confederates under Ramseur were hopelessly routed by Averill. This compelled Early to face about, and he returned from Strasburg towards Winchester. On July 24th at Kernstown,

on pretty nearly the same ground as that on which Stonewall Jackson had been defeated in 1862, Early fought the Second Battle of Kernstown, and inflicted a

* General Early states that the force with which he arrived before Washington was only 8,000 infantry, 40 field pieces, and 2,000 badly mounted and equipped cavalry. *History of the American War*, footnote to pages 278-279. By Lieutenant-Colonel Fletcher.--F. M. R.

severe defeat on the Federals under Crook and Averill, and drove his late pursuers up to and across the Potomac. He then set to work, destroying the Baltimore and Ohio Rail-road which was the Federal great line of communication with the West. He also sent McCausland and his cavalry on a raid into Maryland and Pennsylvania where they committed great havoc and disgraced themselves by burning Chambersburg in Pennsylvania. As McCausland retired, he was

Battle of Moorefield.

overtaken by Federal cavalry under Averill at Moorefield and badly defeated (August 7th). These two incursions of the Confederates into Northern territory created very great alarm, and Grant determined to crush Early. He accordingly sent a large force under Sheridan to operate in the Shenandoah Valley. Sheridan's successful campaign there was undoubtedly very brilliant ;

Sheridan's Campaign in the Shenandoah Valley.

but when we remember that he had 68,000 men to Early's 17,000 ; * and, further, that he was overwhelmingly strong in cavalry, we can hardly feel surprised at Sheridan's success. It would have been astonishing if he had not been successful. Sheridan started his Shenandoah Valley campaign on August 7th (1864). Early undoubtedly made the fatal mistakes of underrating Sheridan's abilities and of not keeping his small force sufficiently concentrated. Though Sheridan, quickly taking advantage of this, attacked him at

Battle of Opequon Creek.

Opequon Creek near Winchester (September 19th) and defeated him badly, still the Confederates made a magnificent fight of it as can partly be gathered from the fact that though they lost some 4,000 men, of whom 2,000 were taken prisoner, yet they inflicted a loss of 5,000 on the Federals. Sheridan followed up Early's beaten army and came upon it in an exceedingly strong position at a place called Fisher's Hill which

Battle of Fisher's Hill.

he attacked (September 22nd) and, by a flanking movement, rolled up Early's left and sent the Confederates flying in a disastrous rout. Averill's cavalry pursuing them inflicted another defeat on Early next day at Mount Jackson, and his retreat did not stop till he reached Brown's Gap in the Blue Ridge below Port Republic.

Sheridan then set to work and utterly laid waste the rich and beautiful Shenandoah Valley, destroying everything which could in any way be of use as food or otherwise to the Confederates. But he was himself a long way from his base, and his lines of communication and supply trains were continually attacked and harassed by guerillas led by the gallant and energetic Mosby† and others. The Federals loudly

Guerillas.

denounced these guerillas and bushwhackers as they termed them, but they lost sight of the fact that they were burning and destroying the homesteads of these

* *The Shenandoah Valley in 1864*, page 265. By G. E. Pond. Federal and Confederate returns for August 1864 show, as present for duty, Sheridan's (Federal) Army, 68,333 ; Early's (Confederate) Army, 17,693.—F. M. R.

† I would venture to refer the reader to my lecture on Mosby's Rangers which was printed in the *Journal of the United Service Institution of India* for October 1898.—F. M. R.

men, their property, their farms, their store of grain, their mills, everything they possessed. Sheridan, Grant, and the Federals generally seemed to have been surprised that the sufferers resented their loss and took measures to retaliate. To my mind Grant's orders to Sheridan to destroy everything, and the latter's thorough compliance were one of the lamentable necessities of war, but that the retaliation on the part of the sufferers was natural and a thing to be expected. The hanging of some of Mosby's Rangers by the Federals was an unjustifiable barbarity.

Having destroyed all he could, Sheridan retired northward. Early, who had now been reinforced, promptly followed him up, but suffered a severe cavalry defeat at a place called Tom's Brook, some five miles below Strasburg (October 5th). On the 18th we find Sheridan's army encamped and entrenched behind Cedar Creek close to Strasburg; and Early, in his old position at Fisher's Hill, determined to attack him though with greatly inferior forces.

The only hope of success lay in surprising the enemy, and the only hope of effecting a surprise was by a night march along a rugged pathway between Three Top Mountain and the Shenandoah River (North Fork) which must of itself be twice crossed. It is hard enough to move a small force along mountain roads in the dark, but to move several thousand men on different objectives so as to co-operate successfully was, I think, a brilliant achievement of Early's. So profoundly secret did Early keep his intentions that not even the vigilant Federal cavalry suspected what was going to occur.* The longest distance to be traversed was by the troops forming the right attack and was some 7 or 8 miles.

Stealthily an hour after midnight the Confederate columns moved forward in the strictest silence, swords and canteens being left behind to prevent any clattering. The artillery were massed on the main road ready to advance as soon as the rattle of musketry showed the infantry attack had commenced. The guns were not to move till then lest they should be heard by the enemy. At 3-30 A.M. Early came in sight of the enemy's camp fires. He then halted and explained exactly what was to be done, while the men shivered in the chill night air. The Federal camps lay sleeping in fancied security, while Stonewall Jackson's old corps and a brigade of cavalry were creeping round the foot of the hills to gain their enemy's rear; another body of infantry was creeping nearer and nearer their sleeping foes over the top of Hupp's Hill, while a third was crouching close to them. At about 5 A.M. came the first crackle of musketry from the Confederate right column of attack. Then on rushed the other columns; volleys of musketry startled the

* Torbert, the Federal cavalry leader, reported on October 18th—"All quiet"; the attack took place before dawn, October 19th.—vide *The Shenandoah Valley in 1864*, page 221, footnote. By G. E. Pond.—F. M. R.

Federals from their sleep in time to see, through the darkness and fog, their foes pouring over their earth-works with exulting yells. The first positions were swept and carried in an instant, and the Federals were hurled back by the victorious onward rush of Early's army. The troops furthest from the point of attack quickly formed up to rally their flying comrades, and had not the Confederates taken to plundering, the day must have been theirs. The Federals, owing partly to this, were able to hold them in check, and Sheridan, who had been absent from camp for a few days, returned in the nick of time. By the wonderful power of his personal presence, and the grand stand made by the Sixth Corps, the flying Federals halted, rallied, and turned fiercely on their assailants, driving them back over the ground they had just won, retaking the guns they had lost, and, in a word, turned a disastrous defeat into a splendid victory. The defeat that the Confederates suffered was so crushing that they were forced back as far as New Market, and Sheridan felt he could safely dispense with a considerable portion of his army, which he accordingly did, sending it to assist Grant against Richmond. In February 1865 he marched with 10,000 sabres to capture Lynchburg and to destroy the Central Rail-road and Canal. He met Early on March 2nd (1865) at Waynesboro' and defeated him finally, and the Shenandoah Valley passed into the hands of the Federals, and Sheridan joined Grant.

General Grant's great and final campaign opened in May 1864, and we are now about to look on a series of engagements fought with the greatest fierceness and obstinacy and surpassing gallantry by both sides,—on scenes of frightful and incessant slaughter and misery,—on examples of fine strategical and tactical skill, plans boldly conceived and ably attempted, even if at times unsuccessful, and on untiring vigilance and unwearying obstinacy.

At the commencement of the campaign the *Army of the Potomac* (Federal) under General Meade was posted, roughly, between the Rapidan and the Rappahannock, the infantry chiefly in the vicinity of Culpeper Court House; the main body of the cavalry partly at Stevensburg, about 6 miles south-east of Culpeper Court House, and partly some 4 miles in front of the Court House. The *Army of Northern Virginia* under Lee lay along its entrenchments on the Rapidan, a line stretching roughly from a few miles above Orange Court House to Fredericksburg.

Grant's plan of campaign was to cut Lee off from Richmond or drive him back upon that city, while a force under General Butler, termed the *Army of the James*, was to move upon Richmond *via* the Peninsula. It is necessary to bear in mind that the Northern Armies out-numbered the Southern by about two to one. Nevertheless Lee with his numerically weaker army manœuvred so as to compel Grant to fight him in difficult country like the Wilderness; he frustrated Grant's attempts to outflank him or cut him off from Richmond; he met and drove back the attacks on that city made by the *Army of*

the James; he was in time to meet Grant's move against Petersburg, and kept him there besieging that place and inflicted great losses on him; and it was only when Sherman came up from the Carolinas to Grant's aid that the latter's hugely superior force at length compelled Lee to surrender, in order to save the gallant remnant of his worn out and starved army, though still full of fight, from further sufferings. It took Grant from May 2nd, 1864, to April 9th, 1865, nearly a year, to whip an army half the size of his own.

To start with, Lee compelled Grant to fight in the neighbourhood of Chancellorsville and Spottsylvania in that terrible tangle of swamp and jungle known as the Wilderness. Here, on May 5th and 6th, Lee defeated him in the Battle of the Wilderness, inflicting upon him a loss of upwards of 18,000 men,* Lee himself losing some 11,000. Manœuvring in jungle like that in the Wilderness was a most difficult operation; the combatants could barely see each other. So terrific was the fire and so dense the forest that in some places the saplings were clean cut through by bullets as if with a machine. The progress of this great conflict was only known by the rising and falling of a vast musketry fire that continually swept along the lines of battle, many miles in length—sounds which at times approached to the sublime.†

Manœuvring and fighting continued in the vicinity of Spottsylvania Court House from May 8th to 19th, by which time the Federals had lost, since May 5th, 33,000 men and were still unable to move Lee from his position. It was then that, in the sanguinary action known as the Battle of Spottsylvania Court House, we read of the famous *Bloody Angle*, a strong salient in Lee's entrenchments which earned that name. Here a terrifically savage hand-to-hand encounter went on, the combatants being separated only by logs or breast-works. They stabbed at each other with their bayonets over the logs, shot each other through the crevices, climbed on to piles of dead to get at each other; and as they in turn fell, others took their places, those below handing up loaded muskets to those who could see. It was there that the log and brushwood were cut to pieces by bullets and "whipped into basket stuff"; there that the dead, mangled and torn in a horrible manner, lay several feet deep in the ditches and cross-ways of the earth-works.

In this campaign the marching was done chiefly at night, and the contact of the two armies was so close as to require constant vigilance day and night, so that there was but little time for sleep. The firing was incessant. The fatigue, the loss of sleep, the watchfulness, taxed severely the powers of endurance of officers and men. From May 5th, 1864, to April 9th, 1865, the two armies were in close contact, with rare intervals of brief comparative repose.‡

* *Statistical Record*, page 216. By Frederick Phisterer.

† Quoted from *The Virginia Campaign of 1864 and 1865*, pages 55. By General A. A. Humphreys.—F. M. R.

‡ Quoted from *The Virginia Campaign of 1864 and 1865*, pages 117-118.—F. M. R.

Some idea of the severity of the fighting may be gained from the fact that in about six weeks the Federals alone lost 68,303 men.

There were several cavalry manœuvres and engagements going on outside the Wilderness—notably a battle fought on May 11th at Battle of Brooke Pike. a place called Brooke Pike near Yellow Tavern, in which the famous Confederate cavalry leader, Stuart, was killed. Meantime, while all this fighting was going on in the Wilderness, Spottsylvania, and on the North Anna River, the Federal *Army of the James* landed at Bermuda Hundred and advanced on Richmond. These troops were, however, driven back by the Confederates in a fine action known as Drury's Bluff.

Gradually Lee, with consummate skill, fell back to the vicinity of Richmond, and then there came severe, and almost incessant, fighting on the Pamunkey and Chickahominy Rivers. I can only

Fighting on the Pamunkey and Chickahominy. just mention some of the principal engagements that were now of well nigh daily occurrence. In

the action of Hawe's Shop Sheridan's (Federal) cavalry made a fine display of fighting, driving the Confederates back and capturing some of their entrenchments. Then followed engagements on the Totopotomoy Creek (May 30th); at Cold Harbour and

Battles on the Totopotomoy. Hanover Court House on May 31st; at Ashland Station and Cold Harbour again on June 1st; and

once more at Cold Harbour and Bethesda Church on June 2nd. After these we come to the grand attack on the Confederate position between Totopotomoy Creek and the Chickahominy; in which the Federals were repulsed with a loss of upwards of 5,600 men and officers in a little over an hour. Unable to take Richmond from this side,

Attack on Petersburg. Grant determined to attack Petersburg, strike at the rail-roads supplying Richmond, and draw off

Lee's army, or a large part of it, to defend Petersburg. The first attack on this place by 4,500 Federals about June 10th was a failure, the 2,400 defenders making a gallant resistance. Grant then moved with the greater part of his army to attack the place; but the vigilant Lee prevented his sudden and somewhat unexpected assault from

Siege of Petersburg. being more than a partial success; and Petersburg had to be regularly invested on June 20th. It

must not be supposed that the whole of Lee's army was shut up in Petersburg and employed in its defence. He so arranged his force that part of it was engaged protecting the rail-roads leading to Richmond and Petersburg; part in defending the lines round Richmond. I think it may be truly said that he made the utmost of the force at his disposal.

It is interesting to note the great and effective use of mortars in the siege of Petersburg. Men on both sides had been specially trained in the use of this kind of ordnance. The Federals, it is said, employed mortars with great precision when preparing the way for an assault and also for keeping down artillery fire while the assault was being made. Mortars were also used with great effect for keeping down

picquet firing. Heavy and continuous fighting went on round Petersburg, varied by cavalry raids, and attempts to break through the defensive lines round Richmond. Grant's attempts either failed, or, when successful, success was bought at too heavy a price. One incident in the siege of Petersburg was the springing of the great mine charged with 8,000 lbs. of powder. Everything had been carefully thought out and planned by General Meade (Federal), but his orders were so indifferently carried out that the defenders had time to get over the panic and disaster caused by the tremendous explosion, and drove off their assailants with much loss. And so the autumn and winter dragged on in incessant bloodshed, hardships, and misery.

The War in 1865.

At length, in March 1865, Sherman, after his march through Georgia and the Carolinas, joined hands with Grant. On April 1st a fierce assault was delivered on the Petersburg entrenchments, while a battle

Battle of Five Forks. raged simultaneously at a place called Five Forks, some 15 or 20 miles south-west of Petersburg in which the Federals, with an over-powering force, defeated the Confederates. The assault on the city was not successful, but all

Fall of Petersburg. that night it was heavily bombarded, and a second assault next day carried the place. Lee slipped away with his army in the hopes of reaching Lynchburg where supplies could be obtained; and intended retiring thence into the Shenandoah Valley to prolong the war amongst its mountains.

Surrender of Richmond. Richmond formally surrendered on April 3rd, but Lee, hemmed in as he was by an immensely superior force and with his line of retreat cut off, still fought savagely and doggedly.

Battles of Sailor's Creek, etc. At Sailor's Creek, at Highbridge, Farmville, and in the vicinity of Appomattox Court House fierce and sanguinary conflicts raged with varying success. On the 7th Grant wrote to Lee pointing out how hopeless it was for him to prolong the struggle, and calling on him to surrender and prevent further useless bloodshed. Lee at first refused, but two

Surrender of Lee. days later, to save his gallant army from further bloodshed and misery, he surrendered with his whole force at Appomattox Court House on April 9th. This act virtually closed the great war.

Thus ended one of the most awful wars of modern times—a war which teems with lessons for the thoughtful soldier. The subject treats of warfare in mountainous country; of warfare in open plains, in dense forests, in swampy low lying tracts; of sieges; of fierce attacks on strongly entrenched positions; of guerilla warfare; of marvellous cavalry raids; of naval warfare; and, in fact, of almost every known kind of fighting, including that against Indian tribes. There are useful lessons to be learnt from the mistakes made by leaders on both sides, as well as from the examples of able Generalship which abound; and as one reads the story, one cannot but be filled with the profoundest admiration for the superb courage displayed, not occasionally, but incessantly,

by both Federals and Confederates—a courage displayed not by individuals only, but by regiments, by brigades, by whole divisions. As I read of their gallant deeds, and remembered that these officers and men had been but a few months before, not soldiers, but peaceful citizens, I felt that America is a nation of soldiers born, and that her sons are made of that stern stuff which enables men, worn out with incessant fatigue and hardship, to still go forth morning after morning, after nights of broken rest spent in mud and slush and hunger and misery, to their daily handgrip with death and mutilation, with splendid dash and brilliancy, and a courage that none can beat.

In these lectures I have tried to be impartial. It is not for me to say which side was right, and which was wrong. If at times I have blamed various Federal Generals, it was for faults which Northern Chroniclers themselves admit, and dwell upon with manly frankness and honesty. For me the war has a fascination far exceeding that of any other war, and I hope I have, in some little way, helped to encourage the study of its details. I have called these lectures "The Story of the American War," and simply as a story have I tried to narrate the chief events. I only hope that they have been half as interesting to you to hear as it was to me to write them.

DISCUSSION.

Colonel Wolfe-Murray said: Your Excellencies, Sir E. Collen, Ladies and Gentlemen,—I think that from the admirable condensation of the very remarkable events, which our friend, Colonel Rundall, has placed before us, we may certainly deduce some very useful lessons. With your permission I should like to mention just one or two points that in listening to his lecture have struck me as sufficiently worthy of attention. The first of these appears to me to be the impossibility of improvising an army. Those who were present on the occasion of Colonel Rundall's first lecture, as well as to-day, and those also who listened to Colonel Barrow's able lecture which covered a part of the same theatre of war, must have been impressed by the very vivid descriptions which they both gave of the terrible difficulties that occurred at first, before,—to use a colloquial expression,—the troops were licked into shape. The lesson I would draw attention to is the difficulty of replacing a regular organised force: nothing that we can do in an emergency will stand us in the stead of a permanently organised and well equipped army. In England, until, comparatively speaking, a few years ago, I think I am right in saying that the great majority of people had hardly taken that fact to heart. We imagined that what has been very vividly portrayed in the lecture—the courage of the Anglo-Saxon race—was sufficient to carry us through any emergency. I can hardly believe that great as that courage may be, it is sufficient for us to rely upon it alone. That I think is the first lesson to deduce. The second lesson to which I should like to draw your attention is the great influence of sea power in these operations. It has only been incidentally alluded to by Colonel Rundall, and I am not sufficiently acquainted with the details of the war to do more than treat it superficially. You saw, however, what a powerful factor it was in the operations in the western theatre with which

Colonel Rundall dealt in his last lecture ; and how the Northerners here were able to hold the mouths of the Mississippi. Again, to-day, we find the northern troops constantly shifting their base about the James river and the Potomac ; and at one time even advancing from the southward against the Southerners. I think I am right in saying that this flexibility of movement of the northern forces was due solely to the command they possessed of the sea and of the water communications. That is no new lesson ; but it is a point I should like to bring out. It is a point to which we in this sea-girt peninsula of Hindustan should pay considerable attention : for, this was no case of shifting forces over sea into far off countries, but it was solely a question of operations in one great theatre of war. If we are ever to fight, in India, we should take consolation from our possession of this power, so long as our sea power remains paramount. I don't think there are any other lessons which strike me at present. I noticed that at the commencement of his lecture Colonel Rundall mentioned the names of the prominent generals who took part in the war. We have been made familiar, in a previous lecture, and by means of that valuable book, which I daresay many of you have read, Colonel Henderson's *Stonewall Jackson*, with the wonderful exploits of that great soldier ; and we have heard to-day a great deal about the confederate leader Lee. But there was one general on the northern side who bulked very largely in these operations, and particularly in their concluding portion, of whom we have not heard very much. This was no doubt due to the necessity for condensation imposed upon the lecture. The general to whom I allude was Ulysses S. Grant (cheers). I see that he is held in considerable estimation by some of those present ; and I should like to relate to you a short authentic story to show the esteem in which he was held by one of the most prominent men of his time—Abraham Lincoln. During the course of the war a deputation of total abstiners waited upon the President, and said they had a complaint to make against General Grant, which was that he drank. "I presume," said Abraham Lincoln, "that, in making an accusation of this very serious nature against a general officer of the northern army, you have made due enquiries before you came here." They said they had. "I should like," said the President, "a little more information : what is it that General Grant drinks ?" To this the deputation promptly replied :—"It is whisky." "Well," said the President, "I should like to go further with my enquiries. Can you tell me what particular brand of whisky General Grant drinks ?" The deputation was rather abashed ; for they hadn't got that information. And on their confessing their inability to enlighten him, Abraham Lincoln remarked :—"I hope you will go and find out for me what particular brand of whisky it is that General Grant drinks ; for, if you will only tell me, I will supply a hogshead of it to each of my other Generals"—(Cheers.)

Sir Edwin Collen, in closing the proceedings, said :

YOUR EXCELLENCIES, LADIES, AND GENTLEMEN,—

I entirely agree with Colonel Wolfe-Murray in his valuable remarks, and we may confidently accept the deductions which he

has drawn from the history of the campaigns which Colonel Rundall has presented to us. My reasons for asking Colonel Rundall to undertake the labour of preparing the account of the American Civil War, which he has now so admirably rendered to us, were that with an outline of this kind, most valuable and interesting in itself, it might be possible, as time went on, for officers to fill it up by the study and exposition of the various campaigns. Colonel Barrow has dealt with one phase in the excellent lecture delivered a few weeks ago, and I hope that in the course of time other officers will be found to take up other portions of the war, and that in this way Colonel Rundall's lecture and those to fill up the outline may form a military history of the war worthy of this Institution and of the Indian Army. I do not intend to enter upon the field which Colonel Murray has traversed. I agree with him in his appreciation of the lessons which are to be learnt, and I will only point out that the campaigns, of which Colonel Rundall has given us clear outlines, are remarkable in many ways. They are remarkable in the examples they afford of brilliant strategy and tactics, of great mistakes, of magnificent courage, and for the extraordinary example they present of organised armies gradually evolved out of confused material. I quite accept what Colonel Wolfe-Murray has said regarding the absolute necessity for the permanent organisation of armies. At the same time this does not take away from the remarkable spectacle of thousands of militia, volunteers, and men who had never borne arms, being converted at last into armies which won as great and undying renown as ever any regular armies did in the history of war. But it is not only in the domain of strategy and tactics that we may gather useful lessons. The Commissariat and Transport officer may learn what the provisioning and transport of a great army means, while the engineer officer may learn much of the value of entrenchments and the use of railways in war. Indeed, everyone may learn something from the study of these campaigns. The American Army and its military administration have been under trial in the recent war between America and Spain. With all the admirable qualities and characteristics of the small regular army of the United States, defects have undoubtedly been shewn. Those defects will, I feel sure, be remedied in a practical spirit, and we shall see before very long an army and its institutions worthy of the nation which produced the heroes of 1861-65. I am one of those who, for many years past, have believed in that which was considered as Utopian at one time—the political union of the English-speaking peoples of the world, and I rejoice to see the tendency of the last few years. The study of the history of a people is necessary for a just appreciation of its qualities, and I believe that the study of this gigantic struggle will lead us more and more to appreciate the splendid courage, tenacity of purpose, and extraordinary endurance which were displayed by North and South in the great war. Ladies and gentlemen, I will now, with your permission, convey to Colonel Rundall the grateful thanks of this Institution and of the audience for his admirable fulfilment of a most difficult and most laborious task." (Applause.)

ON-

e "
this
: of
ode

ten
of
ing
e of
ers,
sea,

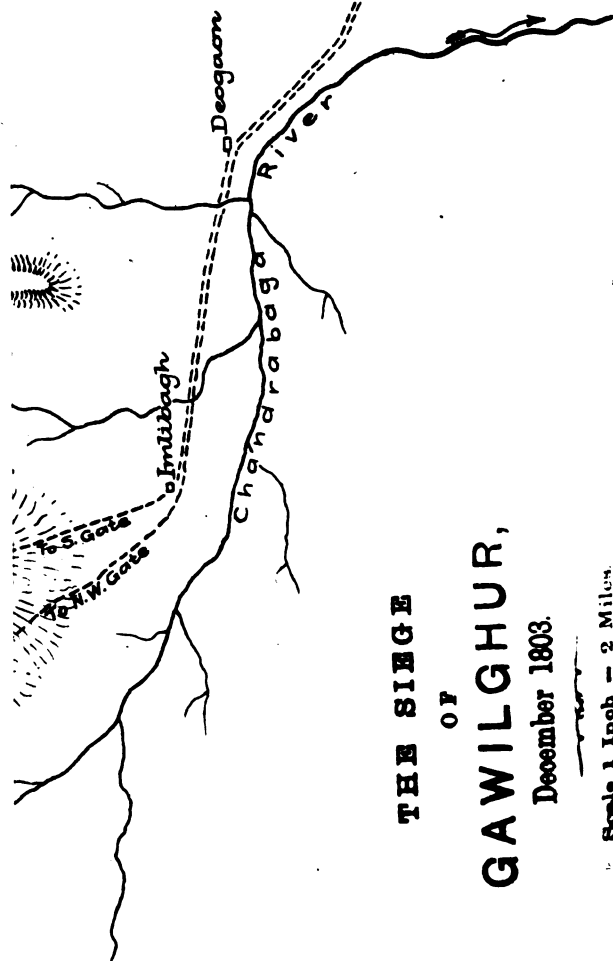
ted
rom
ast
est
the

far
l in
the
y a
in
bit-
ion

ar,
til-
lits
hat
the
ath
, a
rse

s a
ep
an,

has
has
unde
Wai
with
it m
stud
deal
ago,
four
Colo
mili
Arn
has
whic
whic
man
brill
and
grac
Colo
the
not
volu
last
regi
don
The
and
lear
war
cam
hav
Wit
regi
she
spir
wor
one
con
spe
of t
sary
stud
app
ord
gre
con
of t
labo



BATTLES OF THE DECCAN.

BY CAPTAIN R. G. BURTON, 1ST INFANTRY, HYDERABAD CONTINGENT.

III.—The Siege of Gawilghur.

Perhaps it is somewhat of a misnomer to apply the term "battle" to a siege. However, it may not be out of place to conclude this series of sketches of battles of the Deccan with some account of the storming of a stronghold, whose capture was the final episode of Wellesley's operations against the Mahrattas.

Northwards from the field of Argaum, at a distance of some ten miles from that place, the horizon is bounded by a long range of comparatively high mountains, an off-shoot of the Satpuras, running east and west, and stretching north to the Taptee River. Some of the peaks of this range can be seen to rise far above the others, culminating at a height of nearly 4,000 feet above the level of the sea, and 2,000 feet higher than the fertile valley below.

As the eye glances along the line of hills, the attention is arrested by what is evidently the enceinte of a great fort, due north from Argaum, whilst some thirty miles along the range to the north-east the outline of another fort, crowning the summit of one of the highest mountains, meets the view. The former is the fort of Narnala; the latter—the more famous stronghold of Gawilghur.

From the walls of Gawilghur, on a clear day, one can look out far across the alluvial plain beneath, where the fertile land, weighted in due season with millet, cotton, and wheat crops, stretches to the south as far as the eye can reach. This valley was formerly a favourite huntingground of the hordes of Pindaree horsemen, who, in the turbulent days gone by, used to levy contributions on the inhabitants of the wealthy towns and villages that are dotted in profusion over the plain.

Some three miles from Ellichpore, the only cantonment in Berar now garrisoned by a regiment of infantry and a battery of field artillery of the Hyderabad Contingent, the road to the north-west splits into two branches, both of which lead to Gawilghur—one, a somewhat circuitous way, through the villages of Dhamangaon and Mota, the other by way of the hamlets of Deogaon and Imlibagh, the path entering the hills through the valley of the Chandrabagha river, a considerable stream in the rainy season, but a dry, stony water-course during the greater part of the year.

About twelve miles along this latter road through Deogaon is a point where the hill rises abruptly from the plain. A further steep ascent of some three miles by a winding path, where a horseman can,

with difficulty, climb the rugged slope of the mountain, brings one to the summit of the ghauts at the neck of a great spur that juts out to the south. This spur, with rocky and precipitous sides, steepest at its southern extremity, forms a natural bastion, and is crowned by the fort of Gawilghur. The Deogaon road leads to the north-west gate of the fort, whilst a pathway up the spur from Imlibagh brings one to the small sally-port which Wellesley in his despatches terms the south gate. The Dhamangaon road, which is less steep, but about four miles longer, winds round the eastern side of the spur, leading to the northern face of the fort; but it would appear that the attacking force must have marched by an even more circuitous route, as Wellesley states that the distance was thirty miles.

After the battle of Argaum, which was fought on November 30th, 1803, Wellesley at once proceeded to besiege the fort of Gawilghur leaving his sick and wounded at Ellichpore, whence he advanced on December 6th. Colonel Stevenson's force—consisting of the 1st battalion, 2nd Regiment, two companies of the 94th, and the 1st battalion of the 6th—marched by a circuitous route from Dhamangaon, a fortified village which was first captured, whilst the remainder of the division proceeded by way of Deogaon to invest the fortress from the south.

The fort is thus described in the Wellington Despatches:—

"The fort of Gawilghur is situated in a range of mountains between the sources of the rivers Poonah (Purna) and Taptee. It stands on a lofty mountain in this range, and consists of one complete inner fort, which fronts to the south, where the rock is most steep; and an outer fort which covers the inner to the north-west and north.

This outer fort has a third wall, which covers the approach to it from the north by the village of Labada. All these walls are strongly built, and fortified by ramparts and towers.

The communications with the fort are by three gates: one to the south with the inner fort; one to the north-west with the outer fort; and one to the north with the third wall. The ascent to the first is very long and steep, and practicable only for men; that to the second is by a road used for the common communications of the garrison with the countries to the southward; but the road passes round the west side of the fort, and is exposed for a great distance to its fire; it is so narrow as to make it impracticable to approach regularly by it, and the rock is scarped on each side. This road also leads no farther than the gate. The communication with the northern gate is direct from the village of Labada, and here the ground is level with that of the fort, but the road to Labada leads through the mountains for about thirty miles from Ellichpore, and it was obvious that the difficulty and labour of moving ordnance and stores to Labada would be very great."

This is a very lucid account of the fort as it still remains. From the south it was practically impregnable. The southern portion of the fort, forming as it were a citadel, and separated by a deep gully from the outer work, is accessible from the south only by a small sally-port, on which guns could not be brought to bear effectively, whilst the entry by the north-west gate was impossible unless the gate could be blown in—a task rendered extremely difficult, as all the approaches were under fire.

Such were the difficulties that presented themselves to the consideration of the British Commander; but, with the aid of his tried and trusty troops, they were seen to be not unsurmountable. The plan of attack was well conceived and executed, the northern wall being chosen for assault, whilst a diversion was made to draw the enemy's attention to the south.

To Colonel Stevenson* was assigned the task of storming the fort, whilst Wellesley invested it from the south. On the night of the 12th December Colonel Stevenson's force, having, with great labour, dragged the guns and stores over the mountains by roads which the troops themselves constructed, erected two batteries near the village of Labada (which has now disappeared) in front of the north face of the fort, where the gate was protected by an inundation crossed by a stone causeway.

Fire was opened on the 13th; by the night of the 14th the breach in the outer wall, which can still be traced, was practicable, and at ten o'clock next morning this obstacle was carried by the 94th Regiment and the native corps. The wall of the inner fort was then escalated by the light company of the 94th, the gates were opened to admit the storming party, and the stronghold was soon in the hands of the assailants. The garrison consisted of Rajpoots and of Beni Singh's infantry which had escaped from the battle of Argaum. Numbers of the enemy, who fought desperately, were slain, including Beni Singh and the Kiledar, or commander of the fort.

In attempting to escape from the north-west gate during the assault, the enemy was met by a detachment of the 78th and 10th Regiments under Colonel Chalmers, who had been sent to co-operate with Stevenson and arrived at this opportune moment. Thus every way of egress was barred, for the southern gate was covered by Wellesley's brass guns and the remainder of his force. Beni Singh had directed that his wives and daughters were to be slaughtered, so that they should not fall into the hands of the enemy, but the work of assassination was fortunately not fully carried out, owing either to the humanity or carelessness of those appointed to perform the deed. Only three of the unfortunate women were killed, and a few were slightly wounded.

It was expected that considerable treasure would be found in the fort, but the expectations of the besiegers were not fulfilled, for nothing of value was discovered. It is supposed that the treasure known to exist must have been removed before the commencement of the siege, or it may have been concealed within the walls, but to this day it has not been found. I recollect that in 1891, when a large tank in the fort was drained, it was thought possible that some articles of value might be found, as there was a tradition that the Rajpoot women had cast their ornaments into it, but nothing was discovered.

* The services of this excellent old officer are liable to be forgotten owing to his name being overshadowed by that of his great commander. This, his last campaign, brought to a close a long career of honourable and gallant services. At Argaum he was so ill that General Wellesley endeavoured to persuade him not to go into action. He did, however, come in a howdah or litter on an elephant. He died a short time afterwards.

The fort of Gawilghur had been hitherto deemed impregnable by the Mahrattas, or they would, in all probability have made no attempt to hold it after their defeat at Argaum. "This well-planned, vigorous, and brilliant enterprise brought the war to a speedy conclusion. The Rajah of Berar, sensible of his inability to resist the further progress of the British Arms, alarmed for the safety of his dominions, and amazed at the rapidity of General Wellesley's operations even in that mountainous country into which the war was now carried, saw no prudent or safe alternative but to sue for an immediate and separate peace, without waiting for the opinion or the determination of his ally." (Asiatic Register.)

Treaties of peace, advantageous to the British Government and their ally, the Nizam of Hyderabad, were shortly afterwards concluded with both Scindiah and the Rajah of Berar. The turreted walls of the fort of Gawilghur are still in an excellent state of preservation, whilst some of the guns, about a dozen in all, including two of very large size, that were used by the defenders, remain to this day, lying among the rank undergrowth within the walls. The fort is uninhabited, save for some squalid huts just within the northern gate, where reside a few families, who are perhaps descendants of those who defended the fort 96 years ago. Otherwise the place is abandoned, and the jungle has been let in. A couple of miles to the north is the small hill station of Chikalda, and beyond that for many leagues a vast extent of forest, inhabited only by a race of aborigines allied to the Gonds, stretches to the Taptee River, which forms the northern boundary of Berar.

Gawilghur is one among many old forts that crown the summits of the hills of the Deccan strongholds whence the marauders of old used to issue forth, and plunder the inhabitants of the surrounding country. Perhaps nothing is more emblematic of the *Pax Britannica* than the undisturbed state of this part of the country, where every village still contains the mouldering remains of fortifications, and the peaceful and prosperous condition of the inhabitants, where, a few decades ago, there was constant warfare, and no security for either life or property.

In the foregoing series of sketches I have made no attempt to fully describe or comment on the operations of the Army of the Deccan during this war with the Mahrattas, having neither the leisure nor the works of reference necessary for undertaking such a task. I have merely endeavoured to depict, with some local colouring, the scenes of the principal battles together with their main events, in the hope of drawing attention to a picturesque period of Indian history, which is interesting not only on account of its influence on the course of British conquest, but by reason of the personality of the British Commander, whose great military career, taking its commencement in this campaign, culminated twelve years later on the field of Waterloo.

NOTES ON EWING'S PATENT SINGLE RAIL TRAMWAY WITH REFERENCE TO ITS ADAPTABILITY TO MILI- TARY PURPOSES.

BY LIEUTENANT-COLONEL F. F. R. BURGESS, I.S.C.

The single line tramway system invented and patented by Mr. Ewing, C.E., is of a unique description; it differs entirely from any other existing system of tramway or railway, and on account of its cheapness, simplicity, the celerity with which the line can be constructed and the small traction power required, it appears to be admirably adapted for military transport purposes, especially in the field, and in a country like India.

As to the advantages generally of the single line system, they will be touched on later, but the small traction power required is undoubtedly its greatest advantage, more especially from a military point of view, as not only is the enormous expense of the feed and keep of large numbers of cattle and their attendants saved, but on service, wherever it could be possible to have this line laid, it would enormously reduce the number of followers and animals with a force and the carriage required for their food and forage as well as the escort necessary for their protection. Similar advantages would be gained by the use of a line of this kind on large tea, coffee, and other estates and plantations where carriage forms a very large item in the expenditure. On a level road one pair of bullocks can, on the single line, draw a train of trucks carrying a net load of from 6 to 7 tons, a distance of 15 miles in a day with ease; it requires from 16 to 18 pairs of bullocks to draw this load in ordinary carts carrying the military regulation 800lb. load. With relays of bullocks the six or seven ton load could be carried two or more 15-mile stages in one day.

The trucks run on a single line of rail laid on the ground or roadway, and are mounted on two or three double flanged wheels placed under their centre. These wheels are of small diameter, varying from 15 to 30 inches, according to the size and weight of the trucks and rails, the flanges being twice as far apart as the width of the head of the rail on which the wheels run.

The whole weight of the truck is thus borne on two or three double flanged wheels which run on the single rail, so that, unless it were supported in some way, it must fall over.

The necessary support is afforded by a lightly constructed iron side or "balance" wheel of comparatively large diameter, from four to five feet, with a four-inch wide tyre, placed at the side of the truck.

This balance wheel runs on the surface of the ground or roadway about $4\frac{1}{2}$ or 5 feet away from the rail.

It runs on an axle which is pivotted at right angles to the centre of the truck and is kept in position by a hornplate fixed to the frame of the truck.

The axle is also furnished with a double helical spring which eases the jolting of the balance-wheel when going over any inequalities.

The platform of the truck, which carries the load, extends to an equal distance on each side of the central line of the truck over the rail and flanged wheels, and the load would usually be evenly distributed on it, but should it not be so, there would be no risk of the truck upsetting, as the balance-wheel provides against this, and an excess of several hundred-weight may be placed on the far side, away from the balance-wheel without risk.

This is due to the fact that the balance-wheel is placed at a considerable distance away from the side of the truck, generally five feet from the centre of the light one-ton truck which has a six-foot wide platform, and the leverage thus afforded enables a light balance-wheel of only about 160 lbs. weight to balance more than three times its own weight of excess load on the far side and thus allow for careless loading, etc.

The balance-wheel does not bear any of the weight of the load on the truck, and but a very small proportion of the weight of the truck itself, and therefore causes very little loss of power through frictional resistance, especially on a smooth surface.

The axle of the balance-wheel may either be straight or cranked; in the latter case it goes under the platform of the truck, leaving it perfectly flush and clear for the load, which is an advantage; but for certain purposes it may be better to have the other pattern which allows of the centre of gravity being considerably lowered, as the platform can be made very low, only 8 inches above the road surface if required.

The truck runs very smoothly and requires very little force to start it on level ground. It is strongly but lightly constructed of teak or other suitable wood and is fastened with iron nuts and bolts. It is very light in proportion to the load it is intended to carry, which itself is only limited by the weight of the rail and the description of rolling-stock carrying it.

The rails used on this system are of the ordinary railway description and their size and weight vary according to the work required; for instance, in the light planter's line on this system such as that on Messrs. Finlay, Muir and Co.'s estates in the Travancore Hills, some 22 miles in length, the rail used weighs only 14 lbs. to the yard, the 2-wheel trucks running on it carrying loads of one ton each, this light rail being only intended to bear the gross weight of three quarters of a ton per wheel; but where heavier loads are required to be carried on larger and heavier trucks, a heavier rail would be necessary.

On the tramway proposed to be constructed at Calicut, a rail of 30 lbs. to the yard will be used, the trucks (2-wheel) carrying each $3\frac{1}{2}$ tons, and in some cases no doubt it would be of advantage to make use of a still heavier rail.

As any ordinary railway rail can be used in this system, it would, in an emergency, be possible to make use of the stock of rails kept by railway companies and the State Railway Store Department, and the most suitable kind would be those of the metre gauge lines, 41½ lbs. to the yard. These would be suitable for any purposes where great lightness and portability are not the great desiderata, as heavy rolling-stock carrying large loads could be run on them.

Single line rails for ordinary use on existing roads are laid on small wooden sleepers to which they are spiked in the usual manner. These sleepers are 18 inches long, 8 inches wide and 3 or 4 inches thick, and an ordinary metre gauge sleeper would consequently cut up into four sleepers for the single line.

To lay the line on a road the only earthwork necessary is the excavating and filling up of a shallow trench, 12 inches wide by 6 inches deep, for the reception of the rail and sleepers. On a road, of course, there would be no levelling to do and no gradients to improve. The rail can be placed on the extreme edge of the road next to the ditch, or the khud on a hill line, so that ordinary wheeled traffic is not interfered with; the rail itself is buried till only one inch shows above ground, so in any case it is not a serious obstacle to traffic at a crossing, but at such places guard rails could be used as in ordinary railways or tramways.

Light lines for field service.

For use in the field it would generally be advisable to have the lines and rolling-stock as light and portable as possible, and for such lines a rail, weighing 14 lbs. to the yard, would, it is thought, be the most suitable. They would have their fish-plates ready fastened at one end only to allow of the immediate use of the line, the remaining bolts and nuts being inserted and screwed up at leisure if thought necessary.

Corrugated steel sleepers could be used, and as they would pack together in a very small space, they would take up very little room in carriage, and the rails which would not require to be bolted to them would be fastened to them in a very short time. The rails, which, with fish-plates and sleepers and all fastenings, would weigh less than 25 tons per mile, could be carried in large quantities in the trucks running on the line under construction, and the line could be laid ahead of the train carrying the materials as fast as the latter could be brought up, probably quite as fast as troops could march, especially in a level country where the ground would require little or no preparation.

No skilled labour would be required in laying a light military line; its direction having been chosen across the level plain or along a road, the rail having been fastened to the sleepers would merely have to be laid on the ground along the line marked out; the ground would require no preparation beyond a little levelling and clearing away of bumps and excrescences, filling up of holes, etc., in the path of the balance-wheel. There is no keeping the rails in gauge as in a double line, and it does not much matter if the rails shift a bit, a

serious matter with a double line, so that no skilled labour is required in its construction, and little attention after it is once laid, and the services of ordinary soldiers, sepoys, or followers could be utilized on the construction and maintenance of these lines.

One great advantage of the single line is the facility with which the cars can be run round the sharpest curves, and this is an extremely valuable feature on a line in hilly country as the sharpest curves on an ordinary hill road, such as the Coonoor Ghât road, for instance, could be negotiated, and this can be done by no vehicle running on rails on any other system.

This is mainly due to all the wheels of a truck on the single line system running independently of each other, and, in a lesser degree, to the free play allowed by the width of the double flanged wheels on the comparatively narrow rail.

The pairs of wheels on ordinary double line railways and tramways being rigidly fixed to the axle which joins them must, of course, both revolve at the same speed; this is of no consequence as long as the road is straight, but on going round a curve the outer wheel has a longer distance to travel than the inner wheel, and would, if not rigidly fixed to the axle, revolve at a more rapid rate than the latter; not being able to do so, there is considerable friction and "scrooging" set up in rounding curves, which, for this reason, have to be made with comparatively long radii.

The sharpest curve to be found in a double line railway is, it is believed, on the Darjeeling-Himalayan 2-foot line, with a radius of 58 feet, while one of about 1,400 feet is considered as sharp as is compatible with safety on an ordinary broad gauge line, and then only at a reduced speed.

On Mr. Ewing's line in Travancore the sharpest curve has a radius of 60 feet, but on an experimental line at Madras 2-wheel trucks of the Travancore pattern run easily round a curve of only 25 feet radius and at a fair pace round one of as little as ten feet, without risk of accident. A light military line could therefore be laid in any hilly country in which cart-roads exist or could be made, as they could, with comparatively very little labour, be made fit to carry the line which would enormously increase their carrying capacity, without in the least interfering with the ordinary traffic.

The sleepers can be laid either longitudinally or at right angles to the rail. The former method is preferable where there are curves, as the longitudinal arrangement of the sleepers offers a greater resistance to the side thrust of the wheels when going round curves than is afforded by the ordinary cross sleepers.

To enable trains of cars to pass each other on a single line of the kind to be used on field service when moving in opposite directions, Mr. Ewing has invented an ingenious and simple device; each truck in a train would carry a ramp that fits on to the head of any rail anywhere, attached to a single rail, the whole weight of which, with its steel sleepers, would not exceed 160 lbs. When two trains meet coming from opposite directions, one ramp and the spare rail carried by

each truck are placed on the ground to make a temporary siding of the required length. One of the trains is then run on to this siding, and the ramp being removed, the other train is passed on. The ramp is then replaced in position and the train on the siding then also gets on the main line. The siding is then taken up, each train receiving back its own portion.

The field service line could be laid from the rail head of the regular railway line to the furthest point to which it would be possible to carry it and branches might be laid to the various field depôts, hospitals, etc. It could also be taken up and relaid, when necessary, with very little loss of time.

Mr. Ewing has designed a great variety of rolling-stock for various purposes, but for general military transport work the open flush-platform trucks would be the most suitable. The platforms of trucks on this system can be made very much wider than is possible on ordinary light railways, as their width is only limited by the distance between the road or balance-wheel and the rail as compared with the distance of the centre line of the suspended half of the truck from the same point. As they have an unusually large area, they could, by means of the requisite fittings, which could be stored ready for use, be made available for almost any purpose. Open flush-platform trucks would be very suitable for the carriage of stores, ammunition, etc., box sides, paulins and ropes being provided where necessary, and fitted with awnings, seats or cots, fixed or swinging, they would be well adapted for the carriage of the sick and wounded.

Cars fitted for the carriages of passengers, of which there are also special designs fitted with springs, etc., and which could also be fitted up specially as field ambulances, can, on a light line such as would be used on field service, carry as many as 20 men seated, or four men lying down. Larger passenger cars running on a heavier line can carry up to thirty or forty seated.

The open platform truck can also be made use of as a tip truck, and this would be useful for loading purposes, as barrels, bales and even wheeled carriages could be rolled or run up on the truck platforms or off them when tipped up.

When in the latter position the flanged wheels rest on the rail which acts as an axis and the side (balance) wheel is lifted up; this can be done by one or two men, as there is little more than the weight of the wheel to lift. This is a specially useful feature of the system, as it does away with the necessity for loading platforms.

Another specially useful feature of the system is the facility with which a portion of the tramway and a train of trucks can be utilized for defensive purposes in forming a "larger" after the South African fashion. The rails being disconnected where required at two points—in front and rear of the train,—the two ends of the disconnected portion could, with the use of ropes, tackle, or, even

by manual power, be drawn in towards each other so as to describe a circle round which the trucks would be placed at intervals, the said intervals being filled in with brushwood, etc., zeriba fashion, so that the escort, with a train, would have a fair chance of holding their own in case of attack till assistance arrived. Of course this could only be done where a light rail with steel sleepers are employed, as the latter are only laid on the surface of the ground.

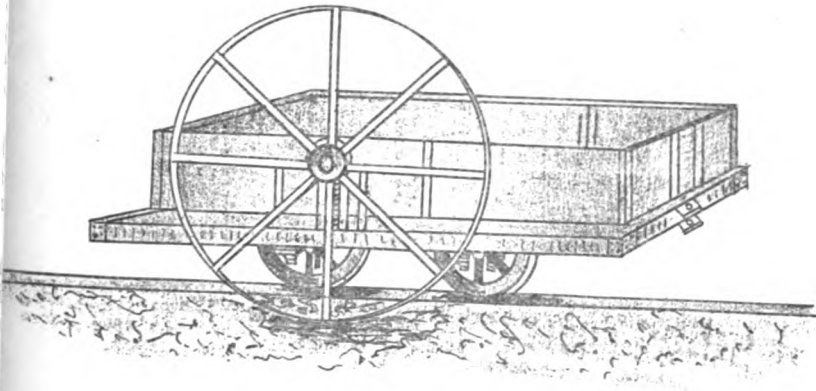
The rails could easily, in the same manner, be afterwards pulled back into their original position. Light machine guns could be mounted on some of the trucks of a train, the boxes, bales, etc., carried on the trucks being used as a protection against rifle fire.

On occasions of this kind the advantage of not being encumbered with the usual large number of transport animals and followers would be especially felt, and even should the draught animals be killed, the men of the escort would be able at a pinch to draw the train by manual labour, two ordinary natives, as the writer has seen, being able to propel a truck carrying a load of one-ton with ease at a walking pace on the level and round two reverse curves, 10 feet radius only.

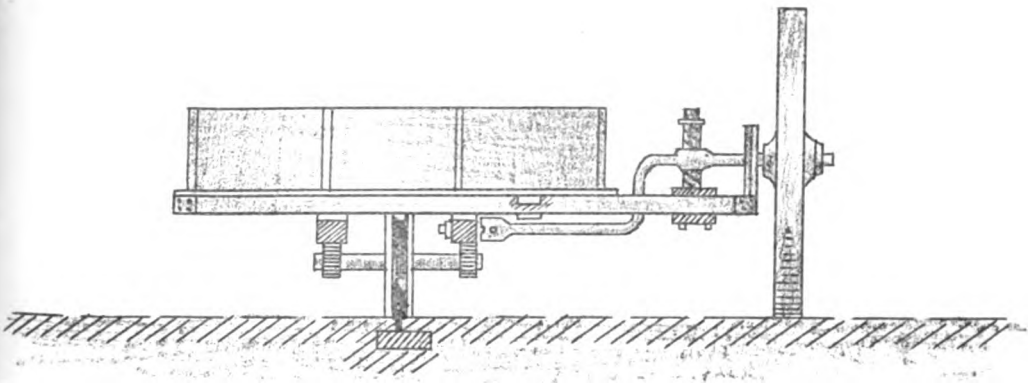
As the weight of one mile of line, with 14 lbs. to the yard rails and steel sleepers (33 inches apart) with all fastenings, would not exceed 25 tons, it can easily be seen that the cost per mile would be marvelously small compared to that of a double line of any gauge, and that the transport required for the carriage of these materials to the front would be correspondingly small.

Lines of a more permanent kind, with wooden sleepers, might be of use in large stations for commissariat purposes and in connection with grass farms, etc., and they would certainly show a great saving in the hire and keep of draught cattle, etc.

PLATE 1



Open Platform Truck with removable Box Sides

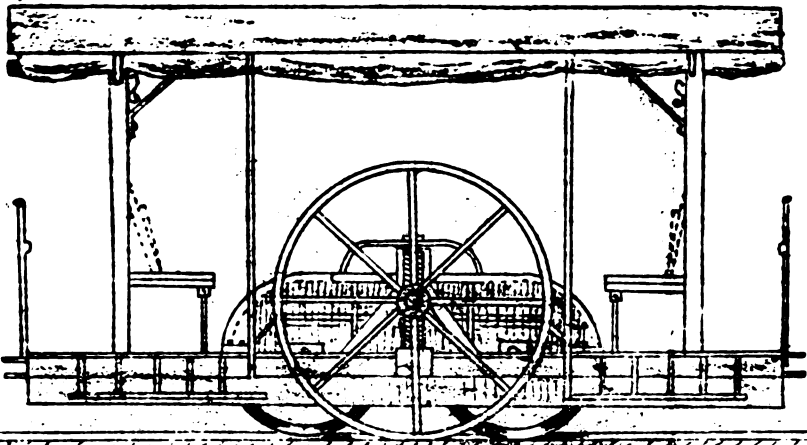


*End Elevation of Open Platform Truck with
removable sides.*

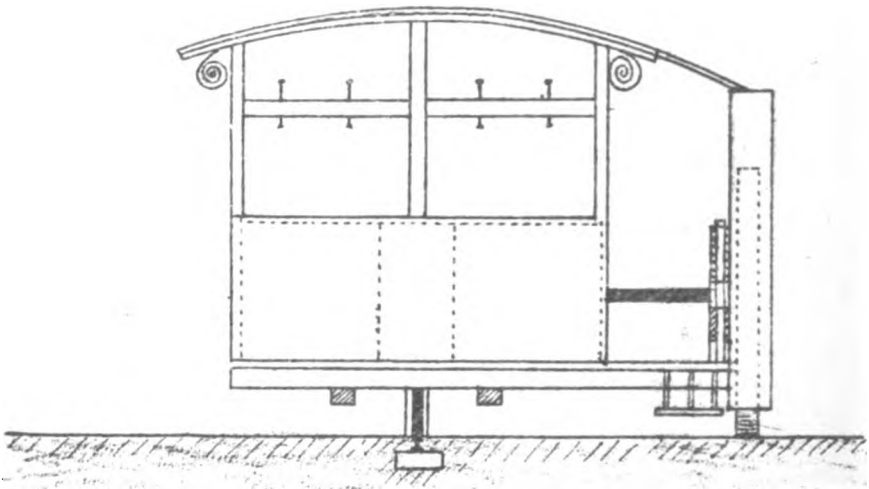
EWING'S PATENT SINGLE RAIL

TRAMWAY SYSTEM.

PLATE 2



Side Elevation

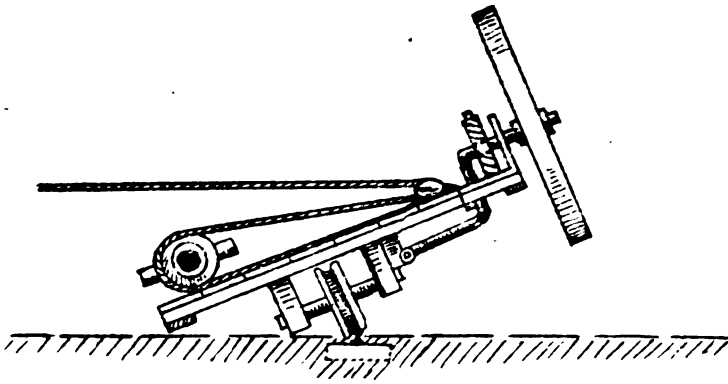


End Elevation

Light Passenger Car for Ambulance purposes.

**EWING'S PATENT SINGLE LINE
TRAMWAY SYSTEM.**

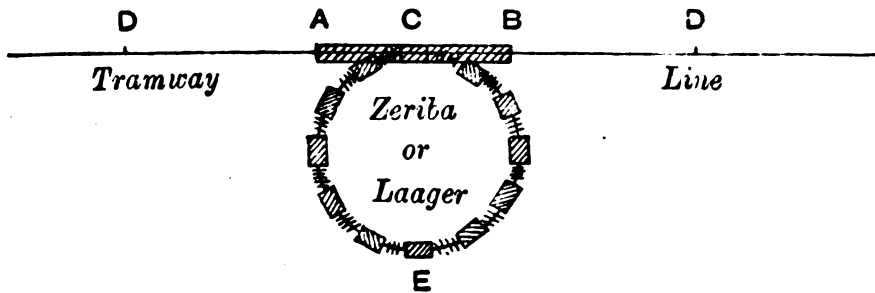
PLATE 3



*Open Platform Truck Tipped
for loading. Dismounted gun being placed on the
truck by means of rope and tackle.*

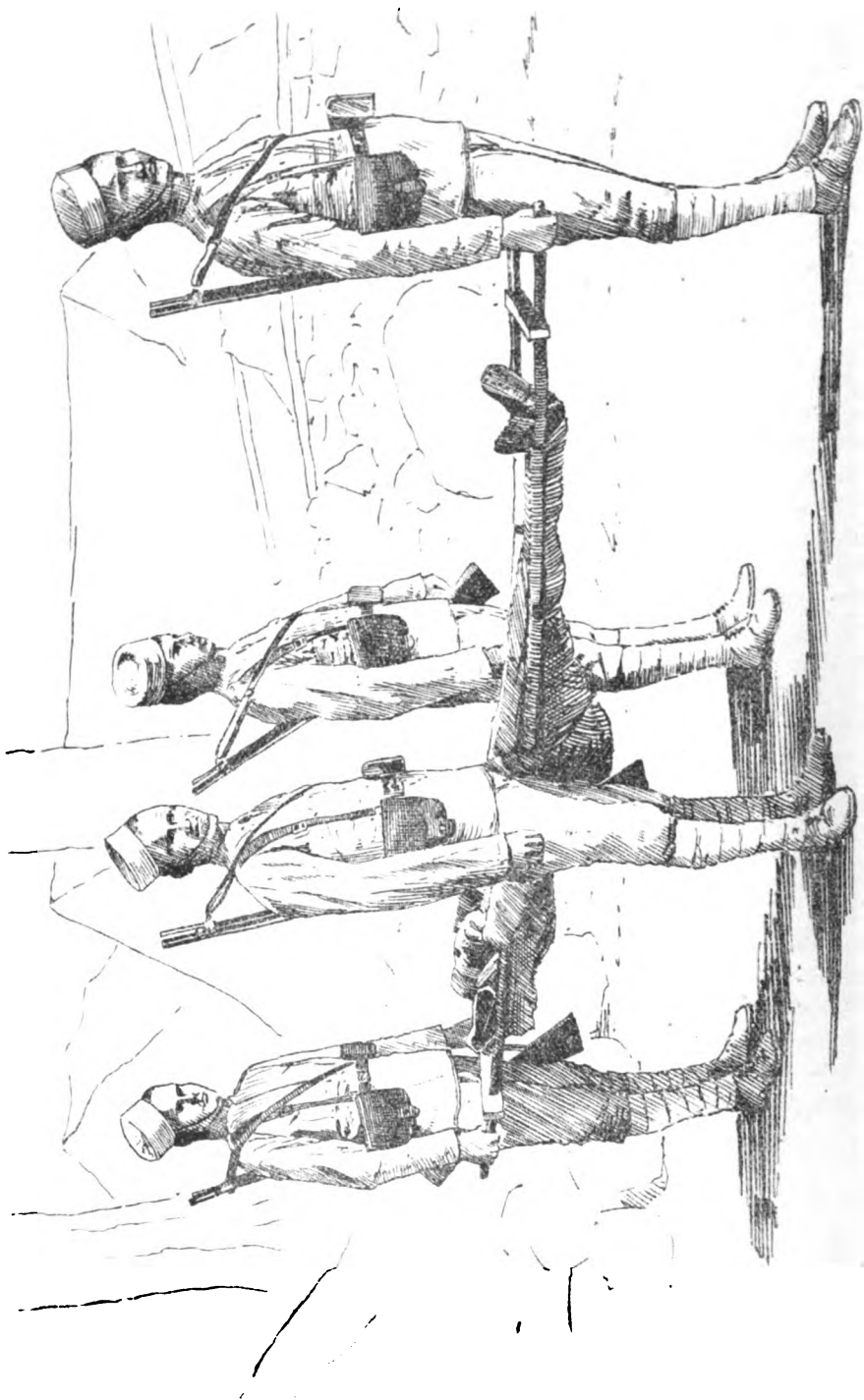
PLATE 4

DIAGRAM SHOWING SIMPLE METHOD OF FORMING
A ZERIBA OR LAAGER



A B length of train, say 60 yards. C centre of train. DD points of disconnection= $1\frac{1}{2}$ times length of train in each direction from C. The train would be run in either direction beyond the point C. Disconnection would be made at D in either direction, and that part drawn round to describe a semicircle CE on to which the train would be run, the circle would then be completed by drawing in the other part of the line CD, and the Laager or Zeriba would thus be completed, the trucks being placed at equal distances round the circle, the intervals being filled up with brushwood, &c.

In this manner permanent as well as temporary defensive posts could be made wherever required along the line. On curves such as would be used in forming a Laager no mechanical bending of the rails would be necessary.



A NEW STRETCHER.

BY LIEUTENANT-COLONEL C. J. McCARTIE, M.A.M.D., M., CH., I.M.S.

[M. CH.]

In my article in the July number of this journal proposing a new system of Ambulance, etc., under the *nom-de-plume* of M. ch., I stated that there was another way of carrying my stretcher, of which I had then no drawing.

The plate shows this new stretcher in which a patient is borne in the lying posture by 4 soldiers.

There is no other stretcher which can be carried by 4 bearers.

In this the middle part of the poles are uncovered by the canvas bed, so as to allow them to be grasped, as shown, by the two side bearers.

Four men could carry a patient a whole march on this stretcher.

A Regiment, with occasional changes of the soldier bearers, could take a large number of wounded on these stretchers a day's journey.

It is not possible for 2 armed soldiers to carry the ordinary two-handed stretcher far.

If carried in this way by 4 men the exertion is surprisingly lessened.

The bed is on a new plan, which makes it more comfortable than other stretchers and also stronger.

It weighs 10 lbs., made with bamboo poles. Perhaps it would be possible to make lighter poles of an aluminium alloy.

I think each company should have one of these stretchers and one of my sling dandies.

It is possible to make this stretcher into a seat, but if sling dandies are carried this change would rarely be required.

For cavalry probably lances could be used for poles, 2 lances on each side, using no struts to keep the sides apart.

The regulation stretcher weighs 30 lbs.

SOME FOREIGN ARTICLES OF SPECIAL INTEREST.

(Contributed by the Intelligence Branch.)

A NEW-RANGE FINDER.

"STEREOSCOPIC RANGE-FINDER." BY THE FIRM OF CARL ZEISS IN JENA.

From the Militär Wochenblatt.

Without going into a minute description of the apparatus, I make the following brief remarks :—

The optical arrangement of the range-finder consists of a so-called Relief-Binocular brought into the market by the above-named firm about 4 years ago. In this glass the observer, after taking a short time to accustom his eyes to the use of it, sees stereoscopically a scale of from 75 metres to 3 kilometres.

The observer now causes this scale, which appears to him to be oscillating in the air, to traverse the object observed. It then settles itself to a line on the scale, from which the distance is read off.

For people, with approximately normal eyesight, half an hour suffices to acquire a knowledge of the arrangement of the apparatus: two or three days' practice is necessary for practical instruction for field purposes. I carried out this practice with 3 under-officers and 3 soldiers.

A stand was used for part of the first two days. From the 3rd day the measurements were done by hand, and in all positions.

In my opinion this range-finder is in every way suited for use in the field.

The qualities, which render it better for campaigning than other range-finders known to me, are the following :—

1. The apparatus is used like any other binocular; thus one can take the range from the firing line and in any position, without in any way attracting the attention of the enemy.
2. The apparatus is carried and manipulated by a single man.
3. The distance is measured from one standpoint, straight upon the mark, and there is no hunting about for a point set up on one side, often difficult to find, or any reflecting arrangement that has to be fixed up at the side.

4. The observer, reads the distance straight off the binocular, without taking it from his eyes; and besides the Zeiss range-finder, both during and after the measuring of the distance, forms a most excellent glass for observation.
5. As the observer looks through the glass and takes the distance with both eyes, tiring the eyes, blurring, and the awkwardness of a reflecting prism, are almost annulled.
6. One special advantage of the stereoscopic range-finder consists in this that the accuracy of the measurement is almost entirely independent of the nature and appearance of the object beheld. Things, which offer no clearly marked points, as a somewhat distant undulation of the ground, an irregular thicket, or the edge of a wood, or, indeed, such things as do not show a definite shape, as a cloud of smoke or dust, can be observed on the stereoscopic scale just as well as a church spire, so long as seen through the binocular they can be distinguished from the background.
7. Better or worse light, and greater or less transparency of the air become matters of less importance on account of the better localisation of the object by the use of both eyes.
8. The observation of moving objects, *e.g.*, of flying birds, or of a balloon, is not only practicable, but on account of the isolation of the object from any surroundings is specially favourable for stereoscopic measurement.
9. Finally, must be mentioned that, by a simple arrangement, the scale can be made visible by twilight and by night, and so any point of light (bivouac fire, etc.) can be ranged upon. That this peculiarity of the new range-finder may be of special importance to the Navy is here merely indicated.

- 1872.....ROBERTS, Lieut.-Col. F. S., V.C., R.A.
 1873.....COLQUHOUN, Capt. J. A. S., R.A.
 1874.....COLQUHOUN, Capt. J. A. S., R.A.
 1879.....ST. JOHN, Maj. O. B. C., R.E.
 1880.....BARROW, Lieut. E. G., S.C.
 1882.....MASON, Lieut. A. H., R.E.
 1883.....COLLEN, Maj. E. H. H., S.C.
 1884.....BARROW, Capt. E. G., S.C.
 1887.....YATE, Lieut. A. C., S.C.
 1888.....MAUDE, Capt. F. N., R.E.
 YOUNG, Maj. G. F., S.C. (specially awarded a silver medal).
 1839.....DUFF, Capt. B., S.C.
 1890.....MAGUIRE, Capt. C. M., S.C.
 1891.....CARDEW, Lieut. F. G., S.C.
 1893.....BULLOCK, Maj. G. M., Devon. Regt.
 1894.....CARTER, Capt. F. C., Northumberland Fusiliers.
 1895.....NEVILLE, Lieut.-Col. J. P. C., S.C.
 1896.....BINGLEY, Capt. A. H., S.C.
 1897.....NAPIER, Capt. G. S. F., 2nd Bn. Oxfordshire Light Infantry.
 1898.....MULLALLY, Maj. H., R.E.
 CLAY, Capt. C. H., S.C. (specially awarded a silver medal).
 1899.....NEVILLE, Col. J. P. C., S.C.

MacGregor Memorial Silver Medallists.

- 1889.....BELL, Col. M. S., V.C., R.E. (specially awarded a gold medal).
 1890.....YOUNGHUSBAND, Capt. F. E., K. Dn. Gds.
 1891.....SAWYER, Maj. H. A., S.C.
 1891.....RAMZAN KHAN, Havildar, 3rd Sikhs.
 1892.....VAUGHAN, Capt. H. B., S.C.
 1892.....JAGGAT SINGH, Havildar, 19th P. I.
 1893.....BOWER, Capt. H., S.C. (specially awarded a gold medal).
 1893.....FAZALDAD KHAN, Dafadar, 17th B. C.
 1894.....O'SULLIVAN, Maj. G. H. W., R.E.
 1894.....MULL SINGH, Sowar, 6th B. C.
 1895.....DAVIES, Capt., Oxfordshire Light Infantry.
 1895.....GUNGA DYAL SINGH, Havildar, 2nd B. I.
 1896.....COCKERILL, Lieut. G. K., 28th P. I.
 1896.....GHULAM NABI, Private, Q. O. Corps of Guides.
 1897.....SWAYNE, Capt. E. J. E., 16th B. I.
 1897.....SHAHZAD MIR, Dafadar, 11th B. L.
 1898.....WALKER, Capt. H. B., Duke of Cornwall's Light Infantry.
 1898.....ADAM KHAN, Havildar, Guides Infantry.
 1899.....DOUGLAS, Capt. J. A., 2nd Bengal Lancers.
 1899.....MIHR DIN, Naik, Bengal S. and M.

UNIVERSITY OF MICHIGAN
3 9015 03510 4028



